DECEMBER • 1951

DOMESTIC ENGINEERING

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A Merry Christmas to Our Readers

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PLUMBING • HEATING • AIR CONDITIONING • APPLIANCES

"The Fitzgibbons '400' Series boiler is a best seller for residential jobs," says Mr. John M. Miles, V.P. and Gen'l Mgr., Eastern Pennsylvania Supply Co., Wilkes-Barre, Pa. That is why he displays it prominently in his modern showroom.

It's easier to sell a FITZGIBBONS *boiler*

Fitzgibbons fuel economy gives you a sales story with teeth in it. Add to this, steel construction, generous furnace volume and rapid circulation. Another popular plus factor is the famous Fitzgibbons TANKSAVER® which supplies abundant domestic hot water every day—all year.

Back of these outstanding features is the Fitzgibbons reputation and its boiler-making tradition that began in the year 1886.

Get all the facts about easier-to-sell Fitzgibbons steel boilers.

Write for Bulletin DE-12 Today

Men who know boilers select... FITZGIBBONS

65th Anniversary

MOST ECONOMICAL IN FUEL — 1886 — THE FITZGIBBONS BOILER

1886-1951

Fitzgibbons Boiler Company, Inc.

General Offices: 101 PARK AVENUE, NEW YORK 17, N. Y.

Manufactured at OSWEGO, N. Y. • *Branches in Principal Cities*

OVER A MILLION HAVE BEEN SOLD!

Economical!

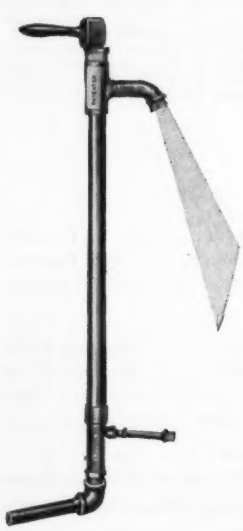
VOGEL PATENTED

BEST FOR

- Farms
- Schools
- Factory
- Garages
- Service Stations

Frost Proof Products

The Standard of Dependability for Forty Years



VOGEL FROST PROOF HYDRANT

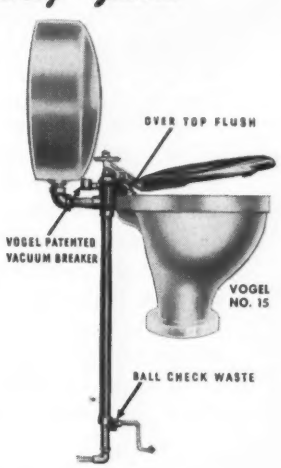
With Ball Check Waste

Low cost, dependable water supply for farms, dairies, garages, service stations and factories. Positive protection against freezing. Heavy brass valves. Lengths: 3 ft., 4 ft., 5 ft., or any desired length.

VOGEL No. 15 Frost Proof Closet

With Vacuum Breaker and Ball Check Waste

Exclusive features found only in a closet of this type. Over-top flush, VOGEL patented Vacuum Breaker, Ball check waste. Uses only 4 gals. water. Vitreous china bowl, hardwood seat, heavy brass valves. White enamel tank.



THEY NEVER FREEZE!

Sold Only Through Wholesalers of Plumbing Supplies

JOSEPH A. VOGEL COMPANY, WILMINGTON, DELAWARE

VOGEL PATENTED FROST PROOF PRODUCTS

DOMESTIC ENGINEERING

VOL. 178, NO. 6; WHOLE NO. 2214

DECEMBER, 1951

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plumbing contractor

CRANE CO.
plumbing wholesaler

A "unit operations core" within UNIVERSITY OF MINNESOTA'S CHEMICAL ENGINEERING BUILDING enables the laboratory to duplicate a variety of conditions that might exist in industry.

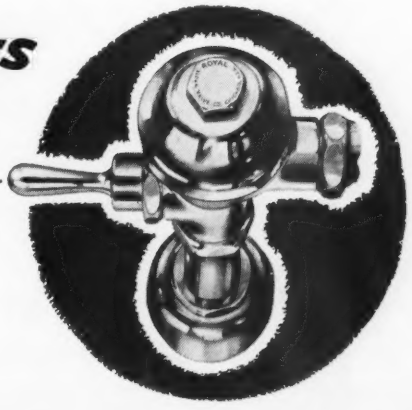
MORE THAN MEETS THE EYE

• The University of Minnesota may well be proud of the architectural beauty recently added to its campus. The handsome exterior of the new Chemical Engineering Building gives no hint of the research and educational purposes of its interior. Flexibility of space arrangement, safety in experimental operations, and maximum efficiency were dominant factors in designing this remarkable structure. When planning a building of such importance it is logical that all equipment shall meet exacting standards. Thus SLOAN is exceedingly proud that its *Flush* VALVES were installed throughout; another example that explains why . . .

more SLOAN Flush VALVES
are sold than all other makes combined

SLOAN VALVE COMPANY • CHICAGO • ILLINOIS

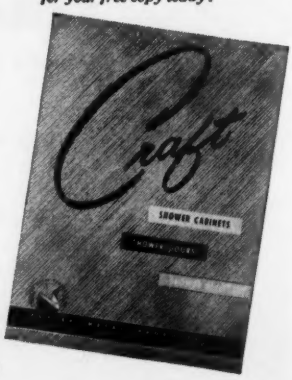
Another achievement in efficiency, endurance and economy is the SLOAN *Act-O-Matic* SHOWER HEAD, which is automatically self-cleaning each time it is used! No clogging. No dripping. When turned on it delivers cone-within-cone spray of maximum efficiency. When turned off it drains instantly. It gives greatest bathing satisfaction, and saves water, fuel and maintenance service costs. Try it and discover its superiorities.



Craft Shower Cabinets

Quality Materials, *Quality Workmanship*, and *Quality Styling* are the hallmarks of all Craft Shower Cabinets. That's why, *with men who know*, Craft Shower Cabinets are considered to be the finest, fastest-selling showers on the market today. All Craft Showers carry a special Guarantee. Models for every type of installation. Glass doors available for every model. *Immediate Delivery.*

Put the new CRAFT Shower Cabinet Catalog to work building sales, volume and profits for you—write for your free copy today!



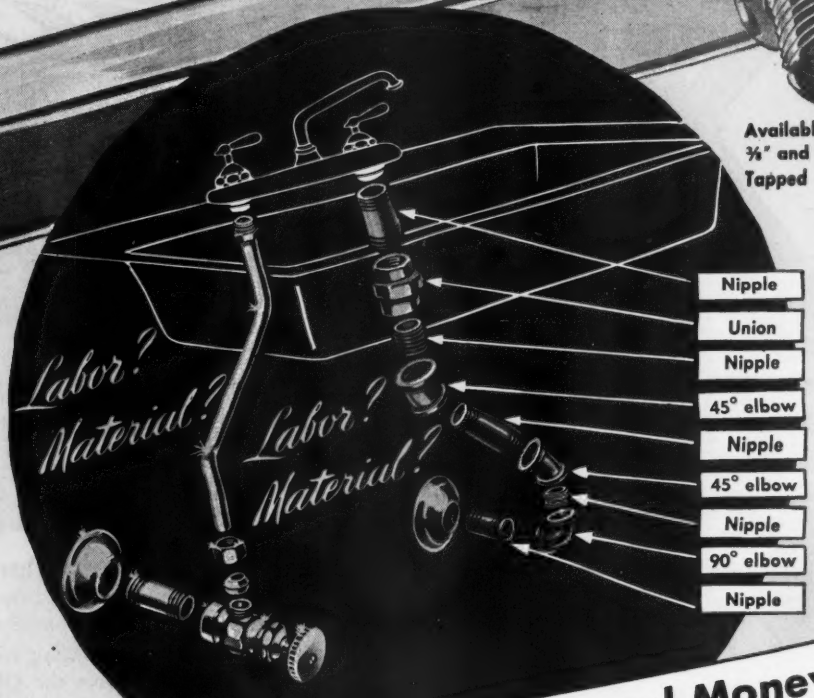
CUTLER METAL PRODUCTS CO.

1025 LINE STREET, CAMDEN 3, NEW JERSEY

SPECIFY CRAFT—IT'S A WHALE OF A STALL SHOWER

Check Your Cost!

Save with SPEEDWAY SINK SUPPLIES



Available in ⅜" and ½" I.P.S. Tapped ¼" I.P.S.

Note ½" I. P. Male Tapped ¼" I. P.

For emergency use with tail-piece

Are You Losing Time and Money?

Speedway sink supplies are available with ⅜" and ½" Iron Pipe Size by ⅜" and ½" Outside Dimension Tube Sizes with angle and straight male or female compression fittings and compression valve. Speedway sink supplies eliminates rubber slip washers, blow-outs and call-backs due to faulty installation.

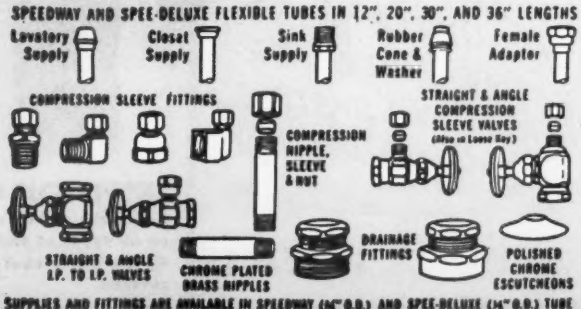
BETTER BRASS GOODS BY

Brass Craft

MANUFACTURING COMPANY

2821 Brooklyn Avenue • Detroit 1, Michigan

SPEEDWAY AND SPEE-DELUXE FLEXIBLE TUBES IN 12", 20", 30", AND 36" LENGTHS



SUPPLIES AND FITTINGS ARE AVAILABLE IN SPEEDWAY (⅜" O.D.) AND SPEE-DELUXE (¼" O.D.) TUBE

IF IT'S SPEEDWAY . . . IT'S *flexible!*

"X" COMES TO THE RESCUE OF LEAKY HEATING SYSTEMS!

AND YOU GET THE BIG REWARDS

Yes, famous "X" LIQUID has been the lifesaver of failing heating systems for over 30 years . . . it flows to the leak in the boiler with the circulation of the water and with its amazing colloidal action, quickly takes up the leak from the OUTSIDE! Not just a temporary repair, but a sound, lasting repair that puts the boiler back in business for steady, winterlong service. "X" also seals sand holes, poor threads, split nipples as well as cracked castings. "X" positively contains no harmful solids to retard good water or steam circulation. It's quick, it's safe, it's CERTAIN! Have "X" BOILER LIQUID and the other famous "X" Heating System Service Products ready for your service calls this winter.

OTHER "X" LIFE SAVERS FOR HEATING SYSTEM SERVICE

WRITE FOR THE FACTS

"X" PIPECUT OIL
A special blend for work on all types of fittings. Keeps parts cool and covered.

"X" FLUSH & RUSTOFF
The combination package. FLUSH to clean the boiler . . . RUSTOFF to keep it clean.

"X" PIPEJOIN
Guaranteed leakproof for cold and hot water lines. The ideal filler and lubricant.

"X" LABORATORIES, INC., 25 WEST 45th ST., NEW YORK 19, N. Y.

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Research
Foundry
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Punch Press

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Department
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Automatic Screw Machine

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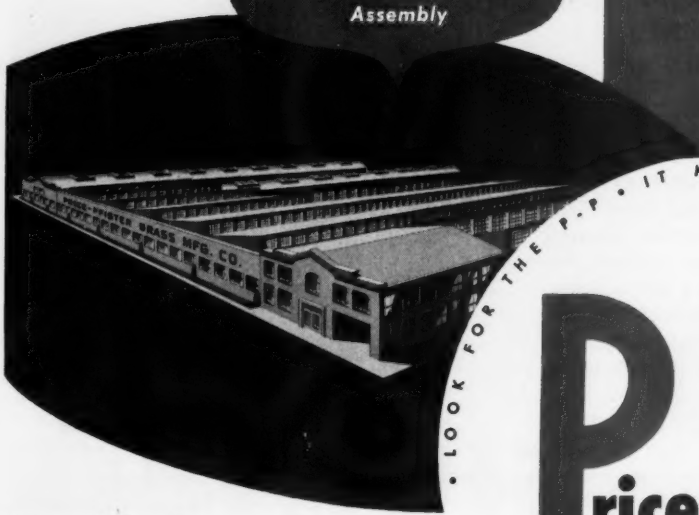


We here at Price-Pfister have concluded another successful year. The wholehearted support of plumbers and wholesalers everywhere has enabled us to continue our plant expansion to make Price-Pfister a self-integrated unit . . . one plant that manufactures every part of every product it sells. This means absolute control of quality . . . your guarantee of satisfactory performance when you buy and sell the Price-Pfister line. "Thanks to You" the P-P trademark means a Precision Product by the West's most modern brass plant.

From all of us to all of you — a sincere wish for a happy and prosperous New Year

• LOOK FOR THE P-P • IT MEANS PRECISION PRODUCTS •

P P Price Pfister

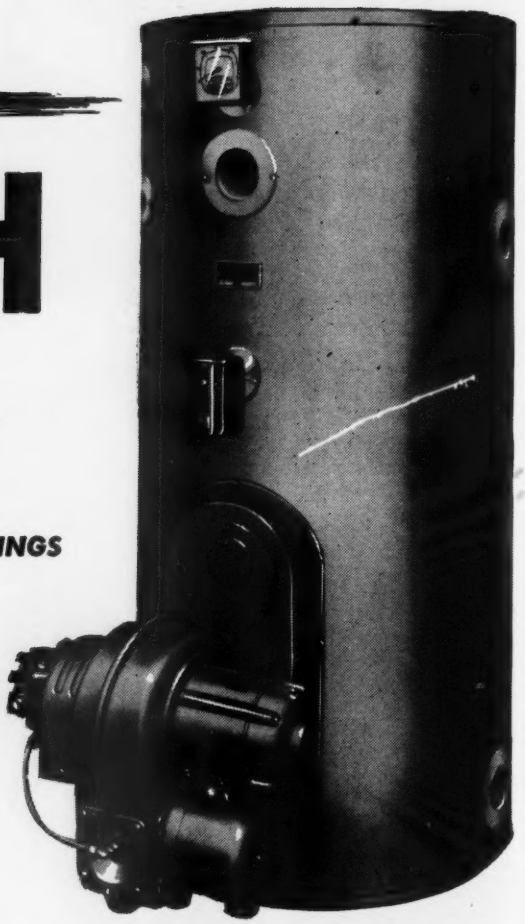
BRASS MANUFACTURING COMPANY

3011 HUMBOLDT ST. • LOS ANGELES 31, CALIF.

ESTABLISHED 1910

to Net More Profit from your Contracts...

Land the BIG ones



ALDRICH

HEAT-PAK BOILER-BURNERS

- APARTMENTS
- RESTAURANTS
- FIRE HOUSES
- GARAGES
- RESIDENCES
- STORES
- DEFENSE PLANTS
- MUNICIPAL BUILDINGS
- CHURCHES
- MOTELS

The big jobs net the high profits. To land those big contracts, make your bid with Aldrich Heat-Pak Boiler-Burners. It's the logical line to push for any size steam or hot water system — in seven sizes, delivering up to 808,000 BTU per hour. Engineered for fuel-saving *complete* combustion, with vertical fire-tube boilers for highest efficiency. Aldrich units come shipped *complete*, ready to set in place and connect. And for a sales clincher how's this: Boilers when specified can be furnished with interchangeable oil or gas burner provision at no extra charge permitting ready conversion in the field. Write for details today, furnishing name of nearest jobber.

Jobber inquiries invited

ALDRICH HEAT-PAK PRODUCTS

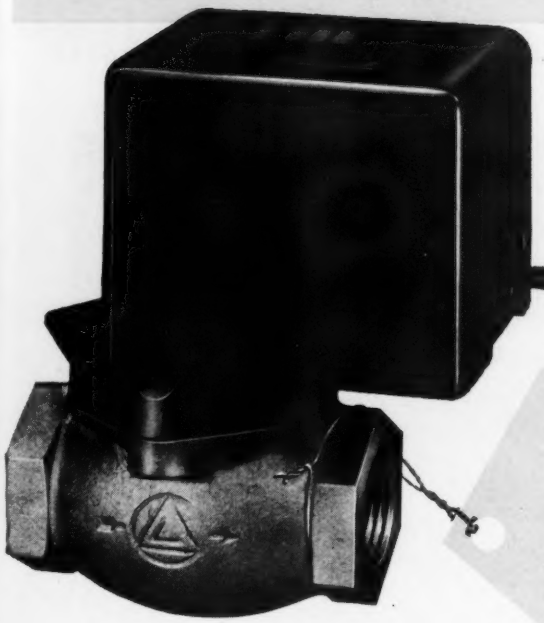
ANOTHER BREEZE MARK PRODUCT

the ALDRICH Company

103 Williams Street, Wyoming, Illinois

A subsidiary of Breeze Corporations, Inc.

demand DETROIT CERTIFIED CONTROLS



This Exclusive Combination of DETROIT Features

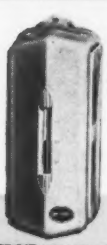
V-579 "BI-FLEX" GAS VALVE

★ Quiet operation—no click, no hum. An ideal replacement for noisy valves.
★ Rugged, compact design—easy to service.
★ Inexpensive.
★ Adaptable to all gases.
★ "Bi-flex" motor operated—low voltage.
★ Temperature and voltage compensation.
★ Snap-action opening and positive closing.
★ ½ inch to 1¼ inch sizes.

The exclusive features of the V-579 "Bi-flex" Gas Valve prove that you get more for your money when you deal with DETROIT. You can always count on giving your customers a better job when you install any DETROIT control. DETROIT controls are designed and built to fill your customers' needs—to give real economy and reliability through years of trouble-free service. The V-579, for example, at low initial cost, gives your customers an exclusive combination of outstanding features which provide new standards for the efficient and quiet operation of modern gas burning equipment. And that's exactly the kind of operation that pays off with more comfort for the user, more sales and profits for you. So take advantage of this extra value—insist that your source of supply furnish DETROIT controls with all your heating equipment. Write for Bulletin No. 229.

Means More Comfort for your Customers

More Profits for You!



No. 411 Thermostat—A sensitive and accurate *Timed Cycling* thermostat for all types of heating systems. Provides close control of room temperature. Attractively styled, easily installed and adjusted. Write for Bulletin No. 193 and Form No. 1545.

DETROIT
LUBRICATOR COMPANY

5900 TRUMBULL AVE., DETROIT 8, MICHIGAN
Division of American Radiator & Standard Sanitary corporation
RAILWAY & ENGINEERING SPECIALTIES, LTD.
Canadian Representatives in Montreal, Toronto, Winnipeg.

"DETROIT"

DETROIT HEATING AND REFRIGERATION CONTROLS • ENGINE SAFETY CONTROLS • FLOAT VALVES AND OIL BURNER EQUIPMENT • DETROIT EXPANSION VALVES AND REFRIGERATION ACCESSORIES • STATIONARY AND LOCOMOTIVE LUBRICATORS

Serving home and industry AMERICAN STANDARD • AMERICAN BLOWER • CHURCH SEATS • DETROIT LUBRICATOR • KEWANEE BOILERS • ROSS HEATER • TONAWANDA IRON

Time Payments

WINTERWAY
OIL FIRED WINTER
AIR CONDITIONER

Only 10% down!

MODERNIZE WITH A NEW, EFFICIENT
AMERICAN-Standard
HEATING UNIT

3 Full Years to pay!

ROYAL HOSTESS SINK

DRESSLYN
LAVATORY-DRESSING TABLE

This folder outlines the seven convenient ways your customers can finance the purchase of American-Standard products. Be sure to study it . . . and to display the colorful posters and streamers provided. Ask your wholesale distributor about these selling aids.

EMPIRE
GAS BOILER

Serving home and industry

AMERICAN BRASS · AMERICAN ART · AMERICAN BLOWER · ACME CABINETS · CHURCH SEATS · DETROIT LUBRICATOR · KEWANEE BOILERS · RONG HEATER · TONAWANDA IRON

How AMERICAN-Standard helps you use

this powerful selling force to

clinch more modernization jobs!

● If ever there was a time that it pays to talk credit terms it is now. Existing modernization terms are much more liberal for heating and plumbing than for other types of purchases, such as automobiles and household appliances. So, here is your golden opportunity to sell the benefits of automatic heating, the convenience of an extra bathroom or a modern kitchen.

American-Standard is all set to help you make the most of today's new and easier time payment regulations. With products that meet every need. And with colorful window streamers and striking posters for use in your store. Be sure you display them prominently so everyone entering your store will know that you sell the finest heating and plumbing money can buy . . . and on convenient terms. For further help in getting your share of extra business, use the American-Standard Better Retailing Plan. **American Radiator & Standard Sanitary Corporation,** P. O. Box 1226, Pittsburgh 30, Pa.

AMERICAN-Standard

First in heating . . . first in plumbing

DON'T BE SATISFIED WITH HALF-WAY MEASURES...

insist on Walseal® products and be certain

— the FACTORY INSERTED Ring insures FULL PENETRATION of the Silver Alloy . . . a perfect joint

Today, contractors . . . builders . . . architects are using brazed connections, in ever increasing numbers on their brass and copper pipe runs. However, they must be certain that the correct brazing alloy is used; that the joint has penetration of alloy up the shoulder of the fitting.

That's why more and more are turning to Silbraz® joints made with Walseal valves, fittings and flanges which assure the proper amount of alloy with no waste. They know that the finished joint not only will withstand hydrostatic pressure, but it will also withstand terrific impact and vibration – in fact, no correctly made Silbraz joint has ever been known to creep or pull apart under any pressure, shock, vibration or temperature which the pipe itself can withstand.

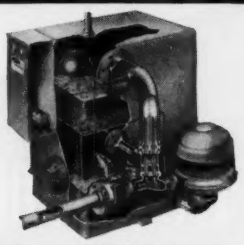
Furthermore, it is a relatively simple operation to make a Silbraz joint – no heavy scaffolding need be erected . . . just cut the pipe, flux, assemble, then braze, following the technique recommended by the Walworth Company. A silver brazing alloy – FACTORY INSERTED – in each port flows out when heated with the oxyacetylene torch, making a joint that is stronger than the pipe itself . . . a one-hand operation, with the mechanic out of the path of the deflected heat – at all times.

WALWORTH

valves and fittings

60 EAST 42nd STREET, NEW YORK 17, N. Y.

DISTRIBUTORS IN PRINCIPAL CENTERS THROUGHOUT THE WORLD



Design Features Worth Looking Into

Water Impeller is only principal moving part. No moving parts under vacuum. No close clearances.
Motors Mounted well above floor to protect against surface water; save floor space.
Easy to Install. 3 anchor bolts fasten pump to floor; no bars or bed plates needed.

steam circulation UP fuel costs . . . DOWN

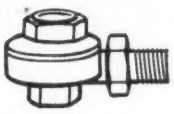
with

DUNHAM VACUUM PUMPS

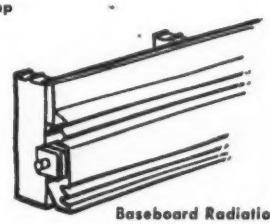
You get more value from fuel dollars with Dunham Vacuum Pumps. That's because these pumps easily produce *and maintain* the high vacuums—*up to 26 inches* —that assure rapid, efficient steam circulation . . . shorter "heating up" periods.

Easy to install and economical to maintain, Dunham Vacuum Pumps come in a full range of capacities—as single or duplex units—are ready for immediate operation as soon as piping and wiring connections have been made.

Check the *complete* Dunham line . . . whether you need a simple tight-seating, non-clogging radiator trap as shown at right . . . or enough baseboard radiation to comfortably heat any living area . . . you'll find the Dunham heating equipment line a good one to tie into. It's complete . . . it's fully dependable. For further information on Dunham Vacuum Pumps, write for Bulletin 1401-3. Similar literature available on other products.



Radiator Trap



Baseboard Radiation

C. A. DUNHAM COMPANY
400 West Madison Street, Chicago 6, Illinois
In Canada: C. A. Dunham Co. Ltd., Toronto
In England: C. A. Dunham Co. Ltd., London

DUNHAM heating systems and equipment

Vari-Vac Differential Heating • Convector Radiation
Fin-Vector Radiation • Condensation Pumps • Horizontal and Vertical Discharge Heaters • Traps • Valves

YES!
Crane Preferred Plumbing
FOR THE LOW-COST HOME

2-97 Neuday Bathtub
1-300-C Yorkshire Lavatory
3-160 Neuday Closet

It is unnecessary for the home owner operating on a limited budget to compromise on the quality of plumbing fixtures. The complete Crane line provides you with fixtures for the low-cost home, as well as for the finest mansion.

Not only does Crane offer plumbing fixtures to meet every residential need, but the Crane line also includes fixtures for hospitals, hotels, schools, industrial plants, and public buildings.

When you sell Crane, you are assured a complete line of highest quality plumbing fixtures and a wide range of sizes, styles, and colors to suit every taste—fixtures that your customers prefer.

CRANE CO. GENERAL OFFICES: 836 S. MICHIGAN AVE., CHICAGO 5
VALVES • FITTINGS • PIPE
PLUMBING AND HEATING

When winter goes south... Spang 'CW' pipe brings summer inside this school—

Even in sunny Macon, Georgia, winters can be cold and uncomfortable at times. So, when this Junior High School for Girls was designed with full facilities for modern teaching, it was also planned for modern heating —radiant heating, of course.

And, as is so often the case where architects and contractors emphasize durability and reliability, Spang "CW" Pipe was specified for this permanently sealed heating system, as well as for other requirements.

When *you* need a truly dependable pipe for commercial, industrial or residential installations, ask your jobber for Spang "CW"— the pipe that's quality-controlled from steel to you. Easy to bend, easy to cut, easy to thread, it offers you *both* an extra measure of reliability and faster installation features.

Remember... the Spang trademark is a guarantee of greater satisfaction *to you* as well as to your customer.

Architect: MacEwen, Hall & Ferguson, Macon, Georgia; *Engineers:* Bloomfield Engineering Co., Macon, Georgia; *General Contractor:* Amerson & Freeman, Macon, Georgia; *Plumbing & Heating Contractor:* Hancock Plumbing Co., Macon, Georgia

SPANG-CHALFANT Division of The National Supply Company
GENERAL SALES OFFICES: Grant Building, Pittsburgh 30, Pa.
District Sales Offices: Atlanta, Boston, Detroit, Houston, Los Angeles, New York, Philadelphia, Pittsburgh, St. Louis

Mr. M. Hochede, General Manager
New Mission Heating & Ventilating Co.
San Francisco, Calif.

"SUBSTANTIAL SAVINGS"

with

QC METALBESTOS

GAS VENT

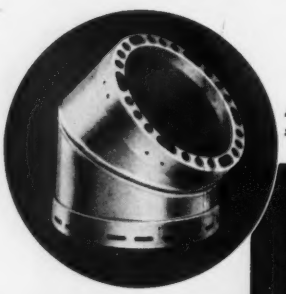
reported by San Francisco contractor.

Mr. M. Hochede, General Manager of the New Mission Heating & Ventilating Company, having recently completed work on a large housing project, has this to say about Metalbestos Gas Vent Pipe:

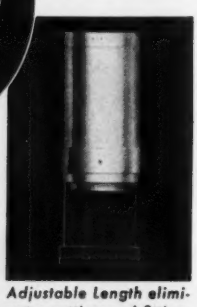
"When QC Metalbestos was first manufactured by the William Wallace Company, we could see that there would be a substantial saving in labor increasing our profits and enabling us to do more work with the same amount of men. As one of the most vital things in any business is labor, we were quick to adopt this new product."

LOWER INSTALLATION COSTS were possible because lightweight self-aligning sections go quickly into place. No special tools or skills needed. Adjustable lengths and versatile fittings eliminate costly cutting and special fabrication . . . keep labor costs to a minimum.

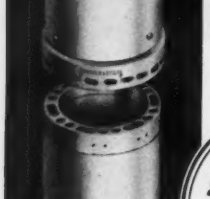
Order from your jobber or write to Dept. C



Adjustable Elbows simplify installation.



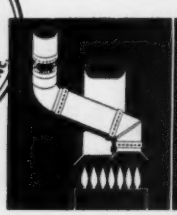
Adjustable Length eliminates cutting and fitting.



Quick Coupling speeds assembly.

LISTED UNDER REEXAMINATION SERVICE UL UNDERWRITERS' LABORATORIES, INC.

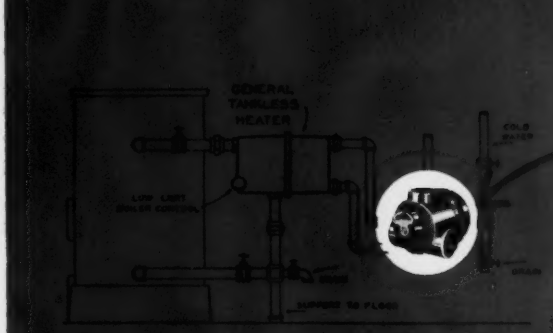
Metalbestos Gas Vent pipe meets all safety requirements of the Underwriter's Laboratories for Type B Gas Vents.



METALBESTOS DIVISION

WILLIAM WALLACE COMPANY · BELMONT, CALIF.

Easy, Extra Profit from Hot Water Jobs



Installation diagram shows how GENERAL Thermostatic Water Mixing Valve is used with GENERAL Tankless Heater to keep hot water at a continuously uniform temperature.

GENERAL Thermostatic Water Mixing Valve

Here's the easiest way you've ever seen to get an extra profit when you install a Tankless water heating system. Just include a *GENERAL* Thermostatic Water Mixing Valve in the estimate . . . *and explain to the customer* how dependably, positively and inexpensively it protects him against scalding water at the tap.

GENERAL Mixing Valves work automatically to keep hot water at the desired temperature . . . insure uniform comfort and safety impossible to obtain with by-pass valves! Outside adjustment sets water temperature anywhere from 80° to 210°F. Unaffected by water-pressure variations. Bronze bodies, nickel-steel sleeve and Everdur thermostatic element give lifetime assurance against corrosion, breakage, and trouble.

Write for complete illustrated folder. General Fittings Co., 118 Georgia Ave., Providence 5, R. I.

GENERAL Tankless Heaters are available in 8 sizes from 3¾ to 35 gallons per minute.

GENERAL

TANKLESS AND INDIRECT WATER HEATERS AND HEATING SPECIALTIES

These ads tell millions of people why copper is scarce

Anaconda advertisements like this one, appearing in full color every month in *The Saturday Evening Post*, are another reason why it's good business to use ANACONDA Products in your jobs.

These advertisements are a part of the "behind-the-scenes" support Anaconda is continually giving contractors. And what's more, they're helping you explain why there isn't as much copper as everyone may want today. At the same time, they're selling millions of people on the advantages of copper for their homes and buildings—people who will be your customers for ANACONDA Products tomorrow.

If you would like reprints of these advertisements for your own use, write to The American Brass Company, Waterbury 20, Connecticut. In Canada: Anaconda American Brass Ltd., New Toronto, Ontario. 5140

modern plumbing calls for — ANACONDA®
COPPER TUBES

How many bathrooms in a jet plane's engine?

It may take as much copper and brass to build a jet plane engine as there is in the faucets, piping, shower heads and all the other fittings in nearly 3 bathrooms. And it takes the copper in 85 outboard motors . . . or 85 oil burners . . . or 38 refrigerators . . . to build the rest of the plane.

Today our country must have first claim on copper for the jet planes and other military equipment it must build to make the free world safe against aggression. For copper and its alloys, brass and bronze, are as indispensable in the complex weapons of war as they are in civilian products—to conduct electricity and heat . . . to resist corrosion and provide immunity to rust . . . to provide strength with easy workability.

Despite the full efforts of the entire copper industry, there just isn't enough of this versatile metal to satisfy every demand. So, to fill the needs of America's defense, it has been necessary to limit the amount of copper that may be used for civilian purposes.

Today the copper industry must be more concerned with jet plane engines than with bathrooms. We of Anaconda are straining every resource—mines and refineries, brass mills and wire mills—to fill every military requirement, and as many civilian needs as we possibly can.

First in Copper, Brass and Bronze

ANACONDA

"ANACONDA" IS A REGISTERED TRADEMARK

51510

SAFETY - HEALTH - COMFORT
are foremost for...
a Merry Xmas

Although much has been done to minimize the hazards and dangers of life, there still remain hazards that are sometimes overlooked.

The field of Plumbing and Heating Protection and Control has advanced through the years, but there are many old installations that have not yet been brought up-to-date.

Watts Products are silent guardians that Protect and Control against normal or unpredictable maintenance conditions or human neglect.

There is great pride in knowing that home and family are safe from dangerous boiler conditions and possibilities of explosion or scalding.

WATTS is making "NEW" and "BETTER THAN EVER" products

OUTSTANDING PERFORMANCE

Discriminating buyers recognize that it pays in cost per year of satisfactory service — to buy Church [illegible]LTEX® seats.

Rugged, durable, beautiful and economical: their first cost is the last . . . they never need replacing.

And Master Plumbers everywhere have found it pays — in sound profits and customer satisfaction — to stock, display and sell them.

No. 9500
Church MOLTEX
SEAT

C. F. CHURCH MFG. CO.
HOLYOKE [illegible] MASSACHUSETTS
Division of
American Radiator & Standard Sanitary
Corporation

Church Seats
"THE BEST SEAT IN THE HOUSE"®

Serving home and industry

AMERICAN-STANDARD · AMERICAN BIDWELL · ACME CARRIERS · CHURCH SEATS · DETROIT [illegible] · KEWANEE BOILERS · [illegible] · TONAWANDA

The original colorware is Universal·Rundle

Today, the finest colorware is U/R— *nationally* advertised in full color

Yes, the first colored vitreous china bathroom fixtures sold in America were made by Universal-Rundle . . . one of many U/R "firsts" in the industry.

Today, these fixtures in Azure Blue, Desert Tan, Verdant Green and Sunlit Ivory, are the world's finest. The individual pieces in a suite are color matched closer than the eye can see.

U/R Advertising Tells America! The year's big news in the fixture field is the four-color, full-page advertisements of U/R, appearing in leading magazines such as the SATURDAY EVENING POST and BETTER HOMES & GARDENS — featuring decorator-designed baths in full natural color photography. And for the "new" in '52 — watch Universal-Rundle.

What Every Plumber Should know! If you haven't yet had your copy of the new U/R Catalog, write today. Complete line of bathroom and kitchen fixtures, with plans, drawings and specifications, helpful data for the plumber and the builder. (See the U/R line in Sweet's Builders File, too!)

The whitest fixtures are U/R— whiter by actual scientific test, than any other leading make.

The strongest bond between surface glaze and body in U/R fixtures, means highest resistance to chipping.

"Harder than steel" surfaces are easy to keep clean, scratch-free, and sparkling new in U/R ware.

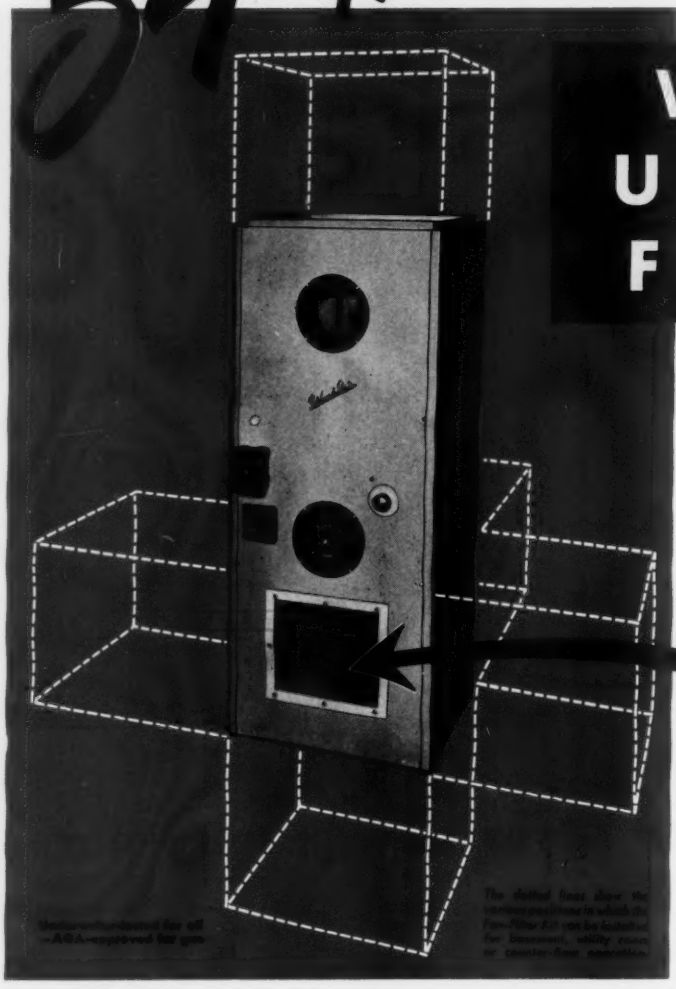
This is Universal-Rundle . . . the pioneer of many industry "firsts"; colored vitreous china, one-fire tunnel-kiln firing, complete laboratory control of production, and many others.

Universal·Rundle

UNIVERSAL-RUNDLE CORPORATION, DEPT. 22, NEW CASTLE, PENNSYLVANIA

Plants in Camden, N. J.; Milwaukee, Wisconsin; New Castle, Pennsylvania; Redlands, California; Hondo and San Antonio, Texas

34 DIFFERENT COMBINATIONS FROM ONE BASIC UNIT!



WINKLER UNIVERSAL FURNACES

Today's most versatile heating plant for the small home! Satisfies virtually every owner preference you'll meet—simplifies stocking.

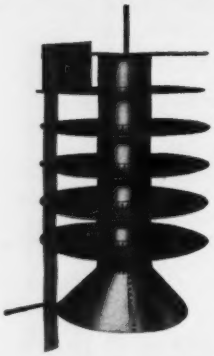
Starting with Model "WU" Gravity Furnace as the basic unit, 34 different gravity or forced air combinations can be made by the selection and arrangement of supplementary equipment. The Winkler Universal Furnace can be equipped with either an oil or gas burner—changeable from one to the other at any time.

Whatever combination is selected, it's a complete package . . . pre-wired . . . everything for a complete winter air conditioning installation except ducts.

The Winkler Universal is a heating man's dream . . . write today for information.

YOUR CHOICE OF THESE FIRING UNITS FOR GRAVITY OR FORCED AIR

1. **Natural or Mixed Gas Burner.** 56,000 to 76,000 BTU Output.
2. **Manufactured Gas Burner.** 56,000 to 76,000 BTU Output.
3. **L P Gas Burner.** 56,000 to 76,000 BTU Output.
4. **Natural — L P Combination Gas Burner.** 56,000 to 76,000 BTU Output.
5. **Low Pressure Oil Burner.** 52,000 to 82,000 BTU Output.
6. **Hi-Pressure Oil Burner.** 82,000 BTU Output.
7. **Pres-O-Vape Oil Burner.** 56,000 to 60,000 BTU Output.



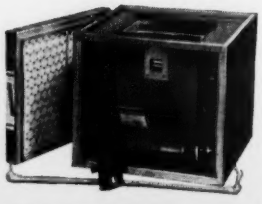
NEW HEAT-STORING DESIGN

The revolutionary Winkler Baffle Assembly smoothes out the temperature variations and discomfort of "off and on" heating. It forms a series of heat storage cells—in effect a multiple "wringer" which thoroughly extracts heat from the flue gases. When the burner is operating, part of the heat warms the circulating air, while some is stored under the baffles for emission during the "off" period of the burner.

This utterly different design introduces a new standard of comfort at low cost.

FAN-FILTER KIT

Can be installed in any of the positions shown above. Casing opens at top, front, back and bottom—doors and filter frame are same size and interchangeable. Blower remains in same position for different openings.



Send your scrap iron and steel to the scrap yard—it is essential to steel production.

WINKLER

AUTOMATIC HEATING EQUIPMENT

YOURS

for More Business

Dole No. 20C Chamber Vent
Also fully automatic, the Dole No. 20C is a combination hot water air valve and air chamber. It was designed specially for venting convectors, etc. on hot water heating systems. The No. 20C is available in IPT sizes ⅛"-¼"-½" and ¾ inch.

Dole No. 20 Hot Water Air Valve
Completely automatic!—That's the latest in performance for an air valve on hot water systems. Dole No. 20 eliminates air from convectors and radiators. No preliminary soaking required. Easy to install. This simple, ingenious valve works equally well on new or existing heating plants with forced circulation or gravity systems. Easy to select the function you desire: manual or automatic venting, or manual shut-off.

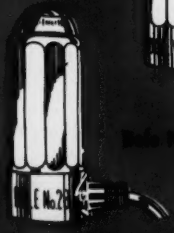
DOLE

Air & Vacuum
Steam and Hot Water
VALVES

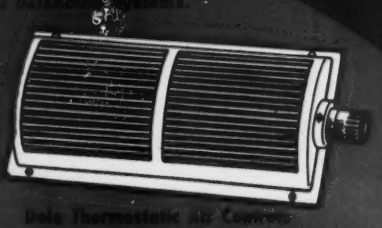
Dole Flow Control
A simple, practical valve that regulates water flow. Limits discharge to a pre-determined gallonage regardless of city water pressure from 15 to 150 lbs. Saves more cool water from overdrawn tankless heaters. Many other uses.

Dole Water Saver
It is a good profit item. Use with tankless heaters and storage tanks for more usable domestic hot water with less danger of scalding.

Dole No. 1A Vari-Vent
Constant seller. Necessary replacements of old vents on one-pipe steam systems run into volume. Variable settings on No. 1A are excellent for balancing systems.



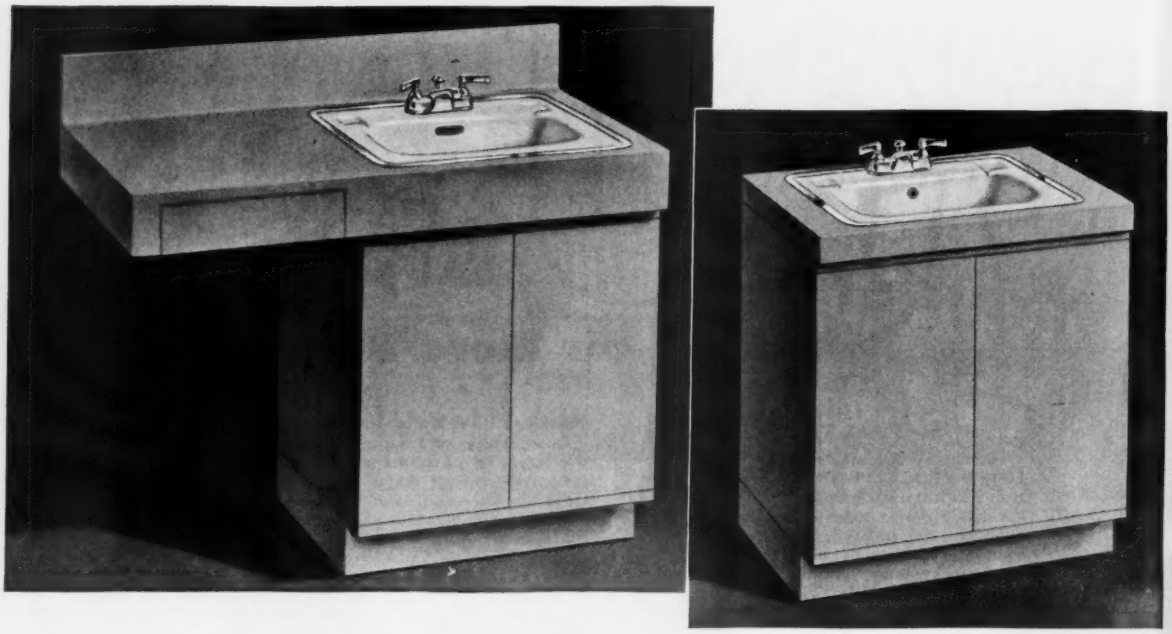
Dole No. 2B Vari-Vent
Another popular seller offers the variable venting feature in a valve specially designed for vacuumizing open systems.



Dole Thermostatic Air Control
Tap the great market for this unique individual room temperature control for forced warm air heating systems. Replaces standard registers. Dial the desired degree of temperature for comfort, and balance the whole installation automatically.

CONTROL with DOLE

THE DOLE VALVE COMPANY
1933 Carroll Avenue, Chicago 12, Illinois
Representatives in Principal Cities



KOHLER

BUILT-IN LAVATORIES WITH CABINETS

Arrowhead—K-1892-F, *vitreous china. 20" x 18". Combination fitting with Synchro drain.*

Tahoe—K-2841-C, *enameled iron. 20" x 18". Centra fitting with Synchro drain. (Also available with combination fitting, K-2843-F.)*

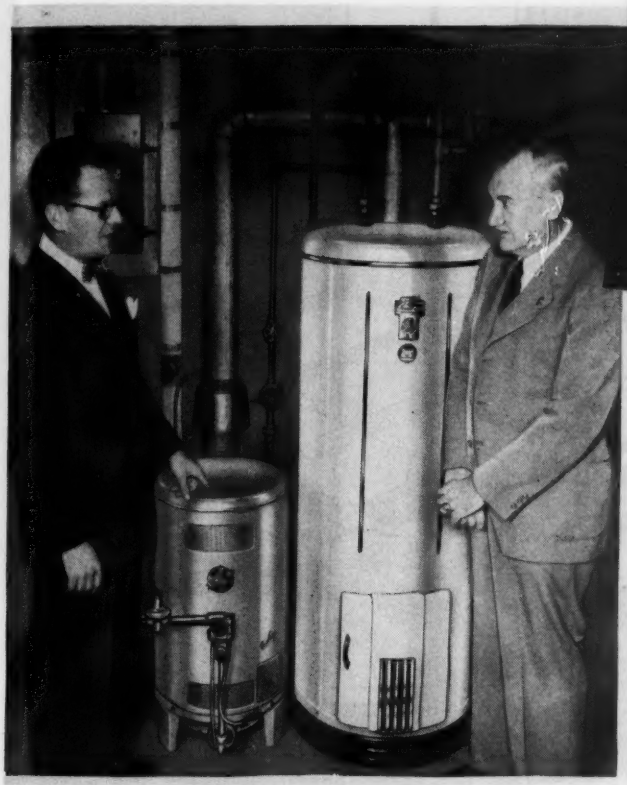
The Arrowhead lavatory of vitreous china and the Tahoe of enameled iron are available with cabinets of hard plywood with a finish that resists alcohol, water and other liquids. Tops are one-piece sheet covered.

Designs are practical and of pleasing simplicity. Double doors have non-projecting touch latches, open on concealed hinges which do not protrude beyond the cabinet width—permitting recess installations. Drawers in large cabinets open smoothly on ball bearing rollers. Fixtures available in four pastel shades and white, cabinets in four harmonizing colors.

Kohler Co., Kohler, Wisconsin. Established 1873

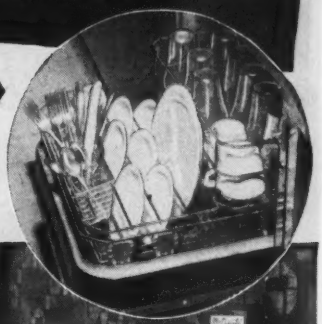
KOHLER OF KOHLER

PLUMBING FIXTURES • HEATING EQUIPMENT • ELECTRIC PLANTS • AIR-COOLED ENGINES • PRECISION PARTS



Fenn Drugs finds the answer to sanitizing rinse requirements in the Burkay "180"

Clare H. Fenn (right), owner of Fenn Drugs, Ann Arbor, observes while William H. Buettner, Jr., The Michigan Consolidated Gas Company, explains the operation of the Burkay "180" in boosting to sanitizing temperature for dishwashing rinse, the general purpose hot water from the 45-gallon Permaglas water heater in his drugstore.



Dishes are washed and sanitized in a modern dishwasher.

Neat and attractive fountain-grill of Fenn Drugstore.

Enforcement of State and Community Sanitizing Requirements mean Burkay Sales for You

Fenn Drugstore lies in the shadow of the National Sanitation Foundation. Mr. Fenn had to be SURE that his fountain-grill would meet public health requirements. And he chose a *Burkay* "180" to provide the necessary sanitizing rinse for dishwashing.

Almost all restaurants, fountains and diners come under municipal or state regulations that enforce public health laws. Others soon will.

This assures a growing interest in and market for high temperature water heaters . . . gives you an exceptionally valuable franchise as an A. O. Smith *Burkay* commercial water heater dealer.

Sell A. O. Smith BURKAY as the ideal automatic water heater for sanitizing purposes. But sell it, too, as a profit-making investment. The elimination of dish toweling by means of high temperature rinsing saves expense and saves time: adds to restaurant operating profits . . . in recorded cases, as much as $56.00 per week!

For larger restaurants sell the *Burkay "618"* dual-temperature water heater. It provides large volume 140° general-purpose water as well as an instant, adequate supply of 180° sanitizing rinse water for large capacity dishwashers, rinse sinks, etc.

GET ALL THE FACTS
by mailing the coupon today.

A. O. Smith Corporation
Dept. DE-1051, Toledo 7, Ohio

Without obligation give us the facts on how we can make more money with A. O. Smith *Burkay* Gas Water Heaters.

Name_____

Firm_____

Address_____

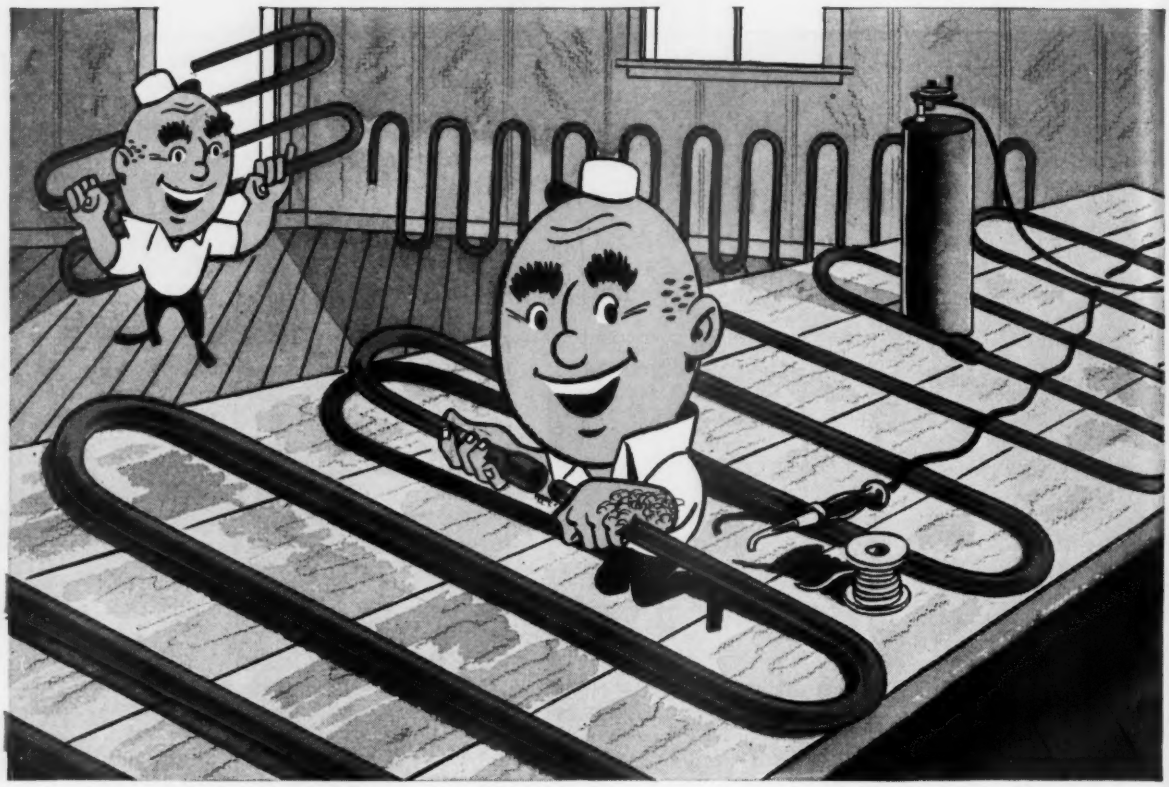
City_____ Zone____ State_____

A.O.Smith
COMMERCIAL WATER HEATERS

A.O. Smith 77th ANNIVERSARY 1874 - 1951

Boston 16 • Chicago 4 • Dallas 2 • Denver 2 • Detroit 21 • Houston 2
Los Angeles 22 • Midland 5, Texas • Milwaukee 2 • New York 17
Philadelphia 3 • Pittsburgh 19 • San Francisco 4 • Seattle 1
Washington 6, D.C. • International Division: Milwaukee 1
In Canada: John Inglis Co., Ltd., Toronto

YOU CAN CAPTURE THE WATER HEATER BUSINESS IN YOUR COMMUNITY AS AN A. O. SMITH DEALER



Form radiant heating grids faster, too . . . with Bundyweld

NOTE that Bundyweld expanded end, above. It spells *even easier* radiant heating installation!

For twenty-foot lengths of Bundyweld Tubing can be sent to your building site with one end expanded (*if specified*). Then, one man quickly forms grid on simple fixture . . . slips unexpanded end into expanded end of the next grid, and silver brazes (or soft solders) grids into strong, permanent, leakproof union.

Two men can easily position the rigid, lightweight Bundyweld sections on ceilings or in floors. No hitches, delays. In jig time, your Bundyweld radiant heating system is all set, to the tune of a major savings in time and costs.

Bundyweld is double-walled from a single strip, copper-bonded through 360° of wall contact. It's stronger-walled, thinner-walled; bends more readily without collapsing structurally. Uniformity, even flow, maximum heat conductivity are yours!

Write today for the complete Bundyweld radiant heating story. ***Bundy Tubing Company, Detroit 14, Michigan.***

Bundyweld® Tubing

DOUBLE-WALLED FROM A SINGLE STRIP

WHY BUNDYWELD IS BETTER TUBING

Bundyweld starts as a single strip of basic metal, coated with a bonding metal. Then it's . . .

continuously rolled twice around laterally into a tube of uniform thickness, and

passed through a furnace. Bonding metal fuses with basic metal, presto—

Bundyweld . . . double-walled and brazed through 360° of wall contact.

NOTE the exclusive patented Bundyweld beveled edge, which affords a smoother joint, absence of bead and less chance for any leakage.

G.E. means GENERAL FUEL OIL FILTERS

The *BIGGEST* Name In Fuel Oil Filtering

2A-300
Deluxe Model for Large Systems and Very Dirty Tanks
9-1/16" High
5½" Diam.
Pipe Openings ⅜ In.
Filter Size 63 Cu. In.

2A-700
Master Model for Average and Large Size Homes
6¼" High
4-5 16" Diam.
Pipe Openings ⅜ In.
¼ or ½ In. (Special)
Filter Unit Surface
83 Sq. In.

1A-25
Standard Model for Small Homes, Space and Water Heaters
4¾" High 3½" Diam.
Pipe Openings ⅜ In.
¼ In. (Special)
Filter Unit Surface
41 Sq. In.

Because there's a GENERAL for every need

General Filters have won outstanding popularity with heating contractors, dealers, and fuel oil service companies because there's a General to fit every need. There's one for your simplest space heater job — and there's one to fill the bill on your biggest, heavy-duty installation, too. All General Filters are economically priced.

Because GENERALS are easy to install

Generals have a reputation with the men who install them because they know that one wrench and a few minutes work do the trick. After that, all-metal casings insure years of leak-proof service.

Because cartridges replaceable in 2 min.

Service men like the General line, too. That's because a new cartridge that insures trouble-free filtering for a long, long time can be installed in just two minutes. Don't forget, either, that every time you install a General Filter, you've put yourself in position for repeat cartridge sales for years to come.

Because customers want GENERALS

Customers are also enthusiastic about General Filters because Generals deliver clog-free service that means protection from shut-downs month after month. Costly service "call-backs" are cut to a minimum.

Note General Filters now distributes CLEAN RIGHT SOOT REMOVER — Certain — safe for oil, gas, or coal heating plants. YOUR CUSTOMERS WILL LIKE IT.

Re-examination Service Listing with Underwriters' Laboratories means dependability — and customer confidence.

GENERAL FILTERS INCORPORATED
GENERAL FUEL OIL FILTERS
12890 WESTWOOD AVE.
DETROIT 23, MICHIGAN
CANADIAN FACTORY BRANCH: CANADIAN GENERAL FILTERS, LTD., 2679 DANFORTH AVE., TORONTO 13, ONTARIO

Standardize on HAMMOND

. . . for plumbing and heating valves in the 125 lbs. working steam pressure class.

Modern cost-saving, specialized production, of one class of valves enables *Hammond to give more dollar for dollar value.*

Carried in stock by all leading plumbing and heating wholesalers

HAMMOND BRASS WORKS

HAMMOND, INDIANA

ORIGINATORS OF INDIVIDUAL VALVE PACKAGING

What supoib taste! The gas water heater will be equipped with Honeywell Controls!

We doubt that cartoonist Larry Reynolds' character, Butch, knows the difference between a valve and a thermostat. But he has one mighty sound idea.

More and more people are discovering every day that there's no better guarantee of dependable, trouble-free operation than the Honeywell name on gas water heater controls and automatic pilots.

So make your first choice *Honeywell* Controls—the first choice of architects, builders and consumers alike. For free information, write today to Honeywell, Dept. DE-12-224, 8775 Mettler Street, Los Angeles 3, California.

MINNEAPOLIS **Honeywell** *Appliance Controls*

Honeywell's model V5105 "Watertender" is the ideal combination control. It incorporates in one unit a main gas cock with pilot position, pilot adjustment screw, flow regulating valve, thermostat, and thermomagnetic pilot featuring 100% shut off in all positions.

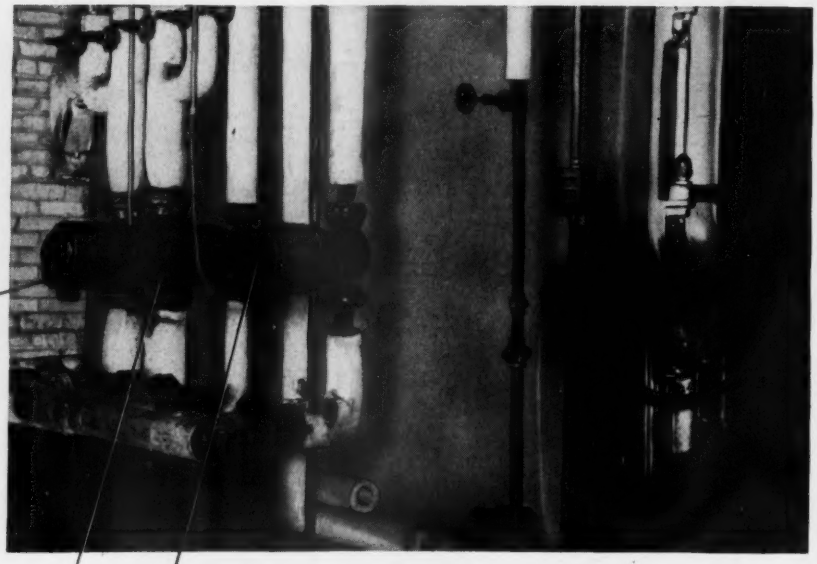
Three different temperatures

FROM THE SAME BOILER

B&G *Hydro-Flo** Heating

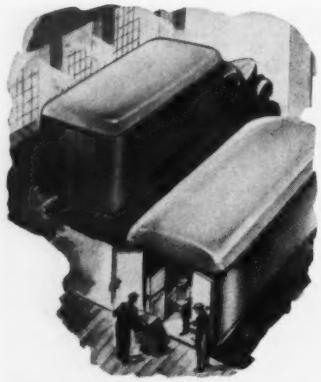
B & G *Hydro-Flo* Heating keeps offices at the proper temperature for sedentary occupations—prevents over and under heating.

72°



Worker efficiency is stepped up by B&G *Hydro-Flo* Heating. Each department can be maintained at the temperature best suited to occupational activity.

68°



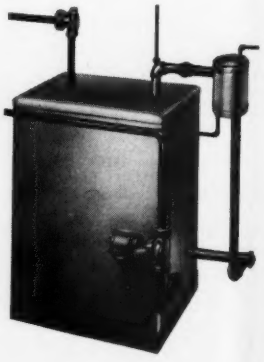
Garages and storerooms need little heat. B & G *Hydro-Flo* Heating saves fuel by keeping such areas at a comparatively low temperature.

50°

Dividing a B & G *Hydro-Flo* System into a number of heating zones permits different temperatures to be maintained in different sections of a building. The advantages are two-fold . . . greater comfort for workers at every level of physical activity and a substantial reduction in heating cost.

B & G *Hydro-Flo* Heating—a forced hot water system—eliminates the usual causes of uneven, wasteful heating. Water as a heating medium can be so closely controlled that every change in the weather is met with a corresponding change in the heat supply. Hence, indoor temperature is maintained uniformly at whatever degree is desired.

Any type of radiant heating units can be used with B & G *Hydro-Flo* Heating—baseboard panels, convectors, radiators, radiant floor and ceiling panels or unit heaters. No complex controls are required —*Hydro-Flo* equipment is amazingly simple and dependable.



For residential application

Hundreds of thousands of homes and apartments today have B & G *Hydro-Flo* Heating. This system provides radiant sunny warmth with all the economy of a controlled heat supply . . . and in addition furnishes an abundance of domestic hot water all year 'round.

Send for catalog of B & G *Hydro-Flo* Heating Products

BELL & GOSSETT

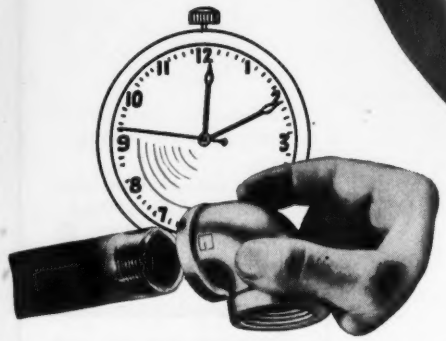
C O M P A N Y

Dept. CH-1, Morton Grove, Ill.

Canadian Licensee: S. A. Armstrong, Ltd., 1400 O'Connor Drive, Toronto, Canada

*Reg. U. S. Pat. Off.

You can't depend on the weather
BUT... YOU CAN DEPEND ON
GETTING TIME-COST SAVINGS
WITH SQUARE "GEE" FITTINGS



GRABLER PIPE-FITTINGS GIVE RELIEF FROM TIME-WASTING GRIEF

50th Year
of Service to the Plumbing and Heating Industry

Time-cost savings are more important today than ever. A dollar buys so much less work now. Grabler Square "Gee" Fittings give you important time-cost savings by preventing time-wasting grief, fumbling and leaky connections.

Square "Gee" fittings speed every job at the point of assembly—protect your time-cost cushion. Precision-cut threads make up quick, easy and tight; smooth chamfering permits fumble-free starting even in hard-to-reach places; sturdy truss construction leaves no vulnerable point in the uniform strength of the rugged body structure. Grabler Square "Gee" Package-Protected Fittings are protected from dirt, rust, loss and damage—every fitting is clean and usable; journeymen waste no time finding and cleaning fittings. Take advantage of the time-cost savings offered by Square "Gee" fittings—order Grabler Package-Protected Square "Gee" Pipe Fittings from your wholesaler.

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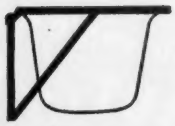
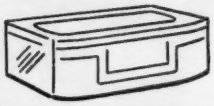
THE SQUARE "GEE" LINE INCLUDES: Malleable Fittings • AAR Fittings • Unions • Rail Fittings • Cast Iron Steam and Drainage Fittings • Patented Drainage Fittings • Steel Pipe Nipples • Hangers • Copper Tube Solder-Joint Fittings



Reinforced construction assures maximum strength.



AllianceWare distinctive modern design complements any bathroom styling.

Gleaming, stainproof porcelain enamel surface cleans easily.

An integral wall guard prevents water seepage.

Heavy gauge sheet steel used in AllianceWare formed metal tubs.

Sheet steel usually used in formed metal tubs in accordance with Federal specifications.

. . . and color in four decorator shades as well as white.

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Quality Features

THAT HELP YOU SELL AllianceWare BATHTUBS

● Home builders and home owners alike quickly appreciate the exceptional design and construction features of AllianceWare bathtubs when the outstanding advantages of AllianceWare are explained.

In addition to these *user* advantages, AllianceWare also offers the plumber many cost reducing features of lighter weight, easier handling, simple, quick installation—and an accuracy of dimensions in finished tubs that does not vary more than ⅛"—a mighty convenient factor both when roughing-in and when making the finished installation.

As an AllianceWare installer you offer sanitary ware of sparkling beauty—sanitary ware that is properly priced—sanitary ware with a national reputation for quality—sanitary ware with which you can build prestige and profit.

ALLIANCEWARE, INC. • Alliance, Ohio

Bathtubs • Lavatories • Sinks

AllianceWare
PORCELAIN ON STEEL

"Look at the space saved!"

Outline shows size of old style fitting compared with the new Close-Ruff Elbow.

– and it's got <u>everything</u> I've wanted in an elbow!

★ ***SHORT RADIUS*** — made to fit tight spots.

★ ***STRONG AND RUGGED*** — with compact design.

★ ***PURE COPPER*** — matches with copper tube.

★ ***FASTER INSTALLATION*** — heats up quickly.

★ ***ECONOMY WEIGHT*** — saves copper and space.

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TRY IT YOURSELF, FREE! We'll be glad to mail you, without cost, a new Nibco Close-Ruff Elbow so you can check for yourself how it speeds the job and protects your profit. Send coupon for free sample.

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I'd like to test the New NIBCO Close-Ruff Elbow. Rush my free sample.

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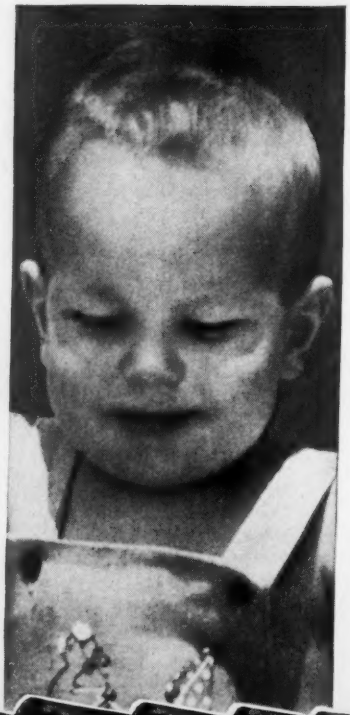
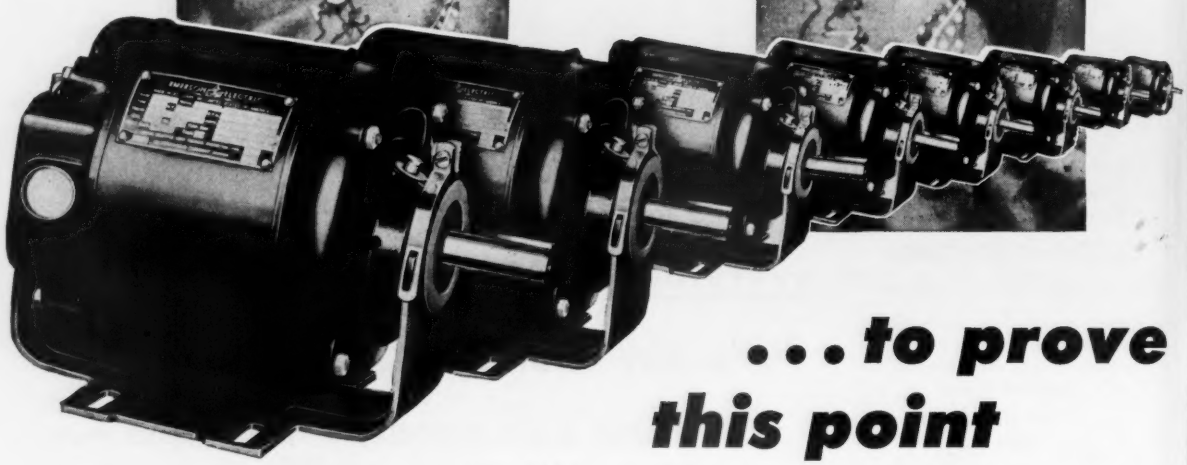
Two are Better Than One





. . . to prove this point

JET PUMP MOTORS

Build dependability into your Jet Pumps by specifying Emerson-Electric Jet Pump Motors (⅛ to 1 H.P.) to assure user satisfaction and more profitable sales. Emerson-Electric standard motors are made in ratings ⅛ to 1 H.P. single-phase capacitor-start, induction run; 1½ H.P. single-phase Repulsion-start Induction-run; and polyphase motors in 1 to 5 H.P. For complete information, write for Bulletin No. 184.

There's nothing unusual in being able to produce *one good motor.* But when that single unit must be multiplied by thousands, and all must match the original, it is a factor you should consider in selecting the motor for your products.

In Emerson-Electric motors, uniformity in appearance is unquestioned. *Uniformity of performance,* the important factor, has earned for them wide acceptance among America's leading appliance and equipment manufacturers. Knowing the reputation of their products is determined by uniformly dependable performance, these manufacturers turned to Emerson-Electric motors.

More than 61 years of precision motor production has made uniformity one of the many advantages inherent in Emerson-Electric motors. For full information on this complete line of motors in the 1/20 to 5 h.p. range, write today to:

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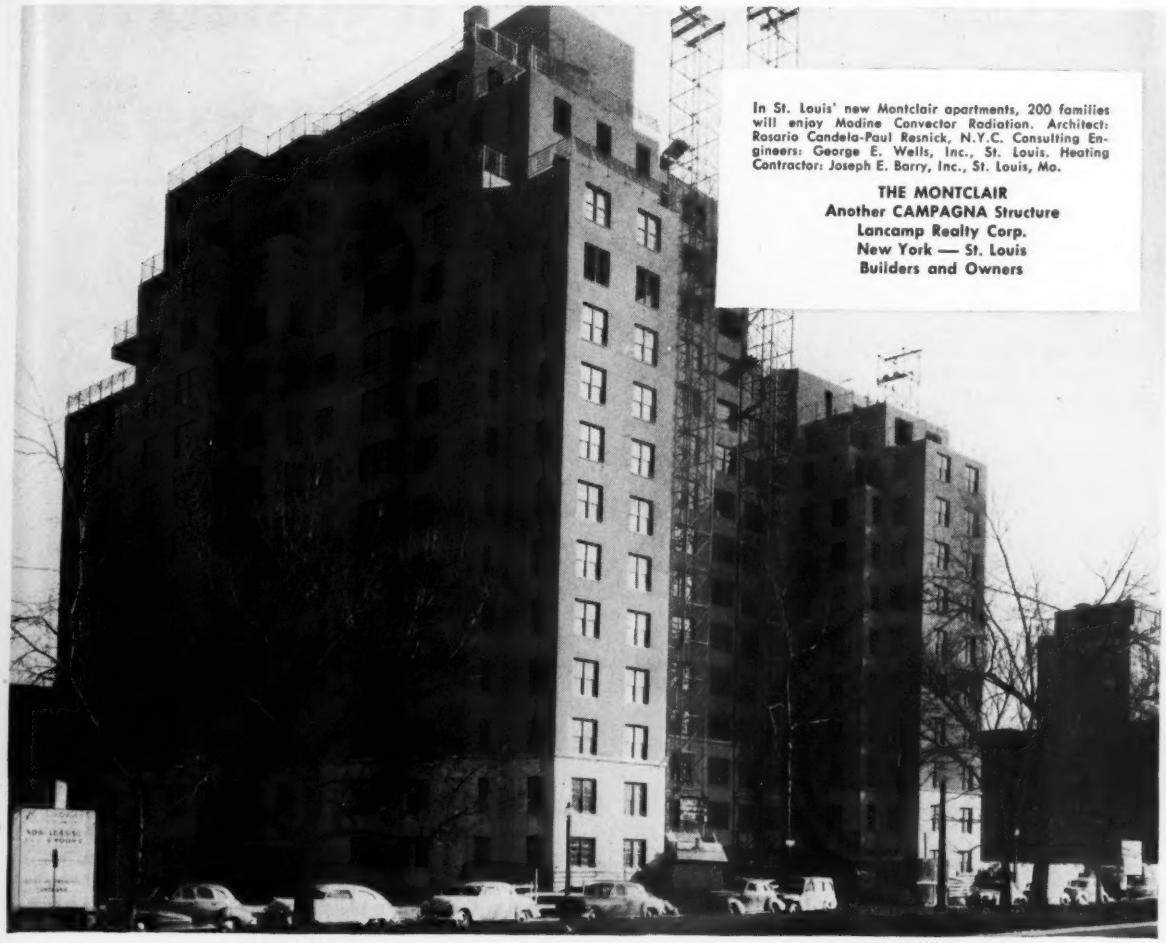

In St. Louis' new Montclair apartments, 200 families will enjoy Modine Convector Radiation. Architect: Rosario Candela-Paul Resnick, N.Y.C. Consulting Engineers: George E. Wells, Inc., St. Louis. Heating Contractor: Joseph E. Barry, Inc., St. Louis, Mo.

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Modine Convectors come in three distinctive enclosures — Type F (shown) for free-standing or recessed installation, Types W and S for wall-hanging.

More and more Modine Convectors are being specified to meet the high standards of excellence demanded of modern heating equipment.

There are sound reasons for this popularity. Foremost is *quality* . . . proved by the universal acceptance which Modine Convectors have enjoyed among architects and engineers for more than twenty years.

With Modine, quality is no idle catchword. It's *real* . . . a result of sound engineering — highest grade materials — advanced manufacturing techniques — skilled craftsmanship — and a rigid quality-control program.

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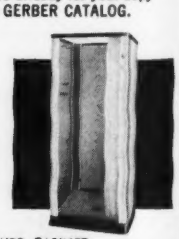

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Washington Report

December • 1951

MATERIALS SITUATION AT A GLANCE

The present materials situation is probably not as gloomy as first-quarter allocations would indicate, NPA officials reported at press time. Here is a roundup of recent changes in this field:

Steel:

NICKEL-BEARING STEELS. (Used in gas burners, combustion chambers and other heat-resistant applications.) Extremely short supply. All available production going to war industries; best substitute probably straight chrome stainless steels.

CHROME-STAINLESS. The nickel-free varieties of stainless steel are still available; and African sources of chrome ore are presently firm. Should be adequate.

CARBON STEELS. The supply situation is improving; but there are other problems. One of the biggest bottlenecks, NPA believes, is the lack of balance among steel producers. Then there are still distribution problems; the exact needs of the military establishment are not completely clear, yet (although the big bulk of the ordering has now been completed); and there is still a question of standardization of sizes and types which could be licked.

Soil Pipe:

CAST IRON SOIL PIPE. Recently (November 7) removed from critical list by NPA.

Copper:

COPPER AND COPPER-BASE ALLOYS. Likely to continue critical through most of 1952. Scrap salvage programs may relieve situation if industry cooperates. Recent labor troubles severely curtailed production. Great need to standardize styles and sizes.

Aluminum:

ALUMINUM. Definitely on the upgrade. Aluminum production has been expanding rapidly during the past few months, and enough new plants are now under construction or in blue-print stage to give ample aluminum for war needs and essential civilian use by mid-1952, it is believed.

Lead:

LEAD. NPA is now planning to put all domestic, imported and scrap lead under distribution controls as soon as possible. Domestic has been under allocation since September 1; imports will go under allocation January 1. Scrap presents some difficult problems but it is hoped to also place this source--from which about a third of our lead comes--under control as soon as possible.

*****

INDUSTRY ASSISTANCE CLINICS

The National Production Authority and the Munitions Board have combined to offer a series of "Industry Assistance Clinics" which will bring manufacturing firms, federal purchasing officials, small business specialists and large civilian producers together to develop prime contracts and subcontract opportunities for firms which may be forced to curtail normal production as a result of material shortages or allocations.

*****

CRITICAL HOUSING

Fourteen critical housing areas have recently been added to the list where credit restrictions are being waived and materials made more readily available to encourage construction. Pro-

grammed into the 14 new areas are 7,660 housing units, of which *5,855 are planned as rental units. This new group brings to 69* the total number of areas designated, and to 48,530 the number of units programmed.

The new areas include: Alexandria, La. (100 rental); Astoria, Ore., (30 rental-30 sale); Biloxi-Gulfport, Miss., (700 rental); *Camden-Shumaker, Ark., (250 rental-250 sale); Fort Campbell, Ky.,* (300 rental-200 sale); Inyokern-Ridgecrest-China Lake, Calif., (250 rental-100 sale); Joliet-Braidwood, Ill., (150 rental-50 *sale); Lawton-Fort Sill, Okla., (750 rental-250 sale);* Lake Charles, La., (400 rental-100 sale); Marietta, Ga., (900 rental *100 sale); Marysville-Yuba City, Calif., (125 rental-125 sale);* Newport News, Va., (500 rental. This is in addition to 750 an*nounced in October at same site.); Rantoul, Ill., (300 rental* 200 sale); and Tuscon, Arizona, (650 rental-350 sale.)

*****

FIRST QUARTER ALLOCATIONS FOR STEEL

*Allocations for the first quarter of 1952 were released Novem*ber 13, with a statement from the Defense Production Administration that they were "essentially the same as for last-quarter, 1951." Structural steel, which vitally affects new construction, authorized for the first three months totals approximately 900,000 tons, compared with a fourth-quarter allocation of 890,000 tons.

In making the allotments, DPA indicated that requirements screened and presented by various claimant agencies amounted to more than 200 percent of the available supply, proof that "there just isn't enough steel to go around" according to Ralph S. Trigg, Deputy Administrator for Programs and Requirements.

*****

ALLOCATIONS FOR CONSUMER GOODS

Allocations of steel, copper and aluminum were announced November 16 for producers of consumer goods. In line with previous forecasts of reduced amounts of these materials available, the totals in the new allocations were down over previous allowances. The allotments, however, will "assure consumers of the broadest possible range of goods during the first half of 1952" according to Manly Fleischmann, NPA Director.

In the first group of essentiallity were items considered extremely important to civilian health, morale, or safety. It included such items as refrigerators, ranges, washers, store and office fixtures and other plumbing and heating products. This group will receive 50 percent of the steel, 35 percent of the copper, and 35 percent of the aluminum used in the base period.

The second category consisted of items which were considered less essential or which could be made with substitutes rather than by use of the scarce materials. Certain items considered merely ornamental or decorative in nature were placed in a group which were forbidden the use of copper and aluminum.

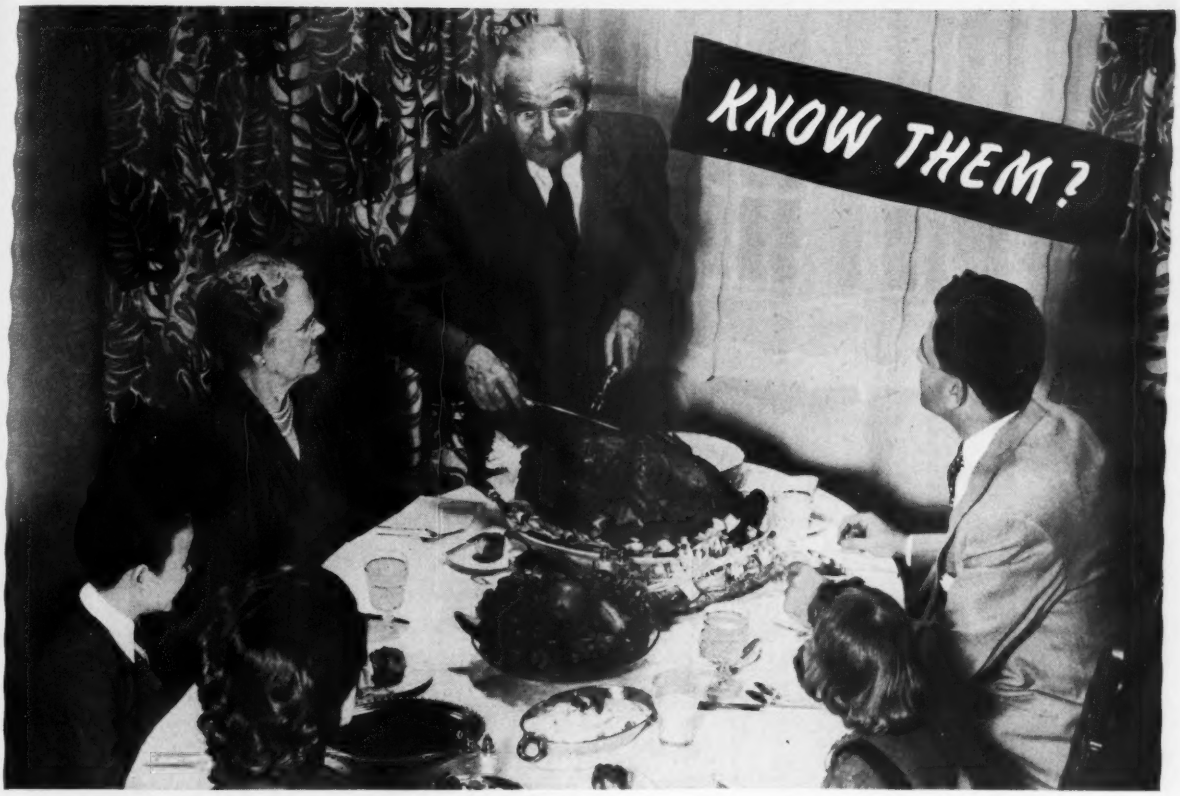
*****

HIGHER PRICES SOON?

OPS opened the floodgates to what may be a flow of price increases when it ordered the mandatory use of the manufacturers pricing order (CPR-22). This regulation, which covers the makers of most processed items now becomes compulsory on and after December 19. Prior to that date its use by the individual manufacturer was optional.

Principal reason why this new OPS policy is looked upon with considerable alarm in much of official Washington is that it also embodies the provisions of the controversial "Capehart Amendment" which allows the inclusion of labor and materials costs through July 23, 1951, instead of the December 31, 1950 or March 31, 1951 cutoff dates now in effect.

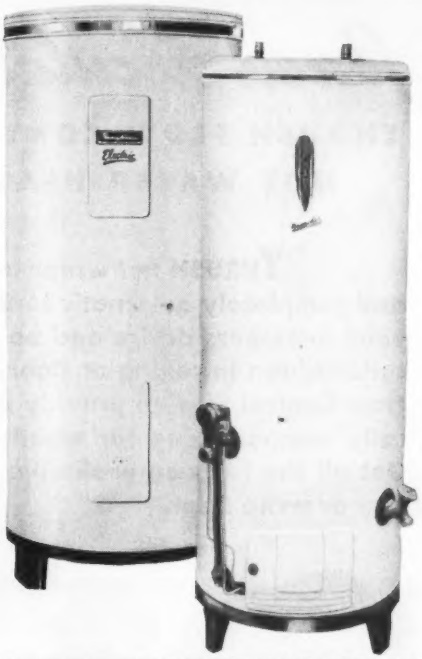
While this Capehart amendment feature is optional as the new regulation is written, it is believed that most firms will take advantage of the opportunity to increase prices to match their own increased costs.



THEY'RE AMONG YOUR BEST FRIENDS...

Pennsylvania AND BRADFORD WATER HEATERS

Whatever the occasion, Christmas, holidays, birthdays or just any day, family get-togethers call for dishes—and dishes call for plenty of hot water. And *that's where you come in!* Homeowners know they can depend upon Pennsylvania and Bradford Water Heaters for outstanding performance, efficiency, speed and economy. That's why they're your best bet for increasing business, stepping up volume, building profits, accelerating turnover. Gas and electric models, sizes, styles for every need. If you're in hot water on water heater sales, don't delay—*mail the coupon today!*



New! See the Pennsylvania and Bradford "Flush-To-The-Wall" 30 Gallon Gas Table Top Models—now available!

***Pennsylvania* RANGE BOILER CO.**

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Quality Products since 1881

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YES! I am interested in BRADFORD and PENNSYLVANIA Water Heaters. Send complete details.

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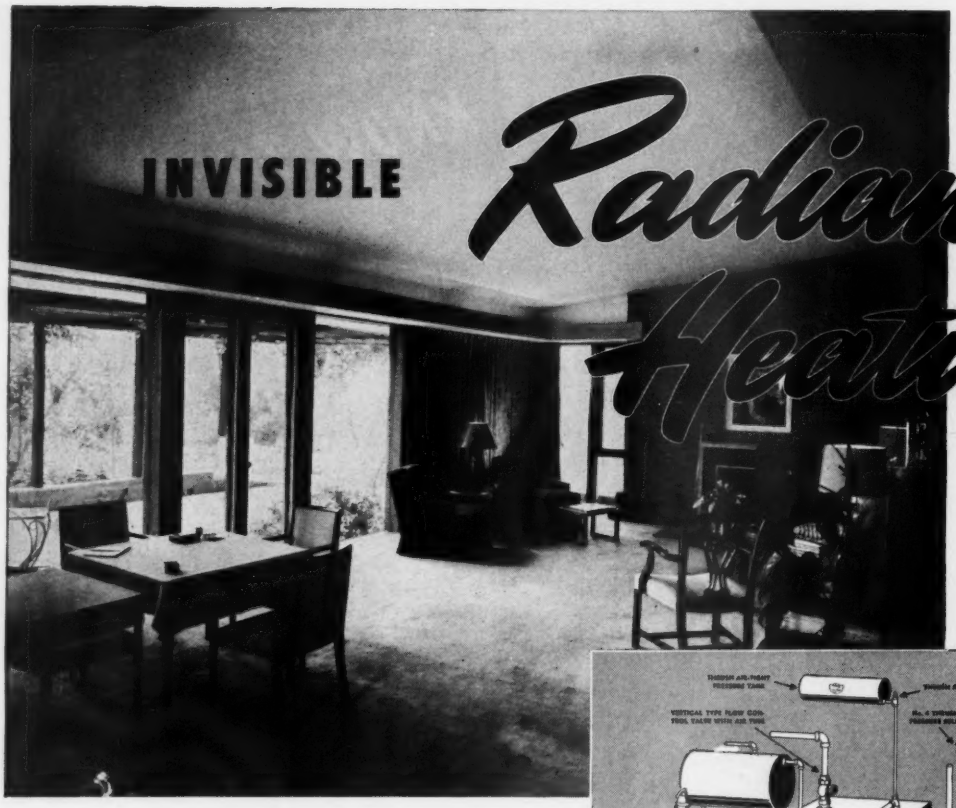

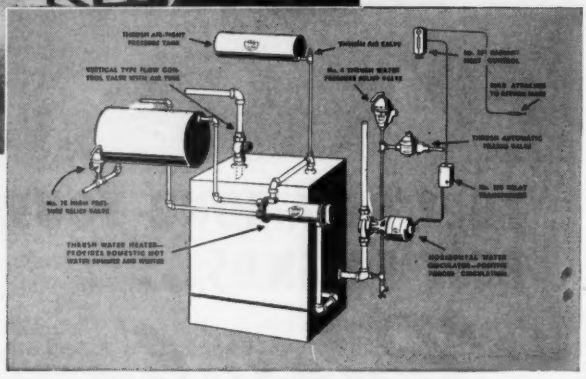

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THRUSH hot water heating system is flexible. With forced circulation and completely automatic control you can install any type of modern heating your customers desire and be sure of complete satisfaction. Heat from radiant coils hidden in ceiling or floor, radiant baseboards or convectors, with Thrush Flow Control System provide perfect comfort without overheating, automatically compensating for weather changes. Zoning is simple and inexpensive. Get all the facts on profitable Thrush equipment now. See your wholesaler today or write Dept. A-12

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● The season is on. Home and commercial builders and remodelers are getting hot about heating right now. This is the easiest and most profitable season to sell new heating jobs.

Dunkirk makes it easy by giving you a line of boilers for use with oil, gas and solid fuels.

Dunkirk design is right... Dunkirk prices are right... Dunkirk policies are right.

Write or Mail Coupon NOW!

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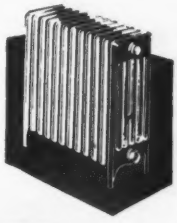
At home in any surroundings. Made of cast iron . . . the life-time metal.



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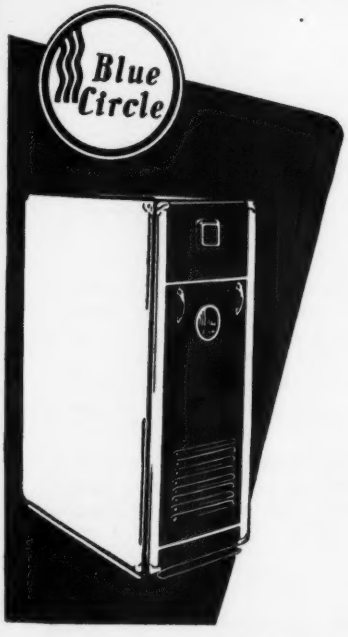
No worry about coal shortages . . . this Dunkirk Boiler is designed for quick change-over from coal to gas or oil.

DUNKIRK'S NEW BABY

A brand new automatic Blue Circle Gas Fired Boiler scarcely larger than a kitchen chair. Finished in white enamel just like modern refrigerators.



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Latest Blue Circle Oil Fired Boiler for automatic steam and hot water heating.

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Steel pipe radiant panels provide "invisible heat"

Parents whose questioning children persistently ask for answers to such stumpers as "What keeps an airplane up?", may sometimes regard the conveniences of modern living as a mixed blessing! For what 6-year-old, snug and comfortable in a radiant-heated home, wouldn't wonder about and ask "where the heat is coming from?"

"Invisible heat" . . . the spring-like warmth from radiant panels concealed in floors, ceilings or walls . . . is here to stay, and its growing popularity will soon make it as understood by our children as was the polished parlor stove by our grandfathers.

Reliable steel pipe, proved in over 60 years of service in hot water and steam heating systems, is, of course, the first choice for these radiant panel heating systems. For it embodies *every* necessary characteristic—economy, formability, and weldability, and, durability that is satisfying beyond the life-span of the structure.

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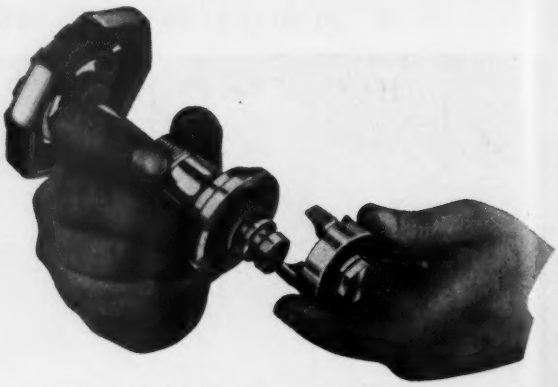

SLIP-ON DISC HOLDER—This unique disc holder locks on securely wth stem in wide-open position . . . yet releases by a half-turn of the stem when bonnet assembly is removed.

JOB-FITTED for longer service... easier maintenance

KENNEDY Fig. 89, Bronze Globe Valve, 150 lbs. steam, 300 lbs. WOG, non-shock

YOU KEEP MAINTENANCE COSTS DOWN with KENNEDY Bronze Valves because they are *job-fitted* . . . every valve specially designed and engineered for the job it has to do.

THE KENNEDY FIG. 89, for example, is designed for services where frequent inspection, cleaning of internal parts and quick renewal of the composition disc are required.

HEAVY UNION BONNET RING permits easy dismantling and reassembly of the valve without risk of damage to body-bonnet bearing surfaces.

THE RENEWABLE COMPOSITION DISCS are available in a variety of materials to meet a wide range of fluid, pressure and temperature requirements.

RUGGED BODY has an unusually high seat to prolong disc life by utilizing full thickness of disc before disc-holder strikes the base of the raised seat.

LONG-WEARING PACKING—molded rings of lubricated asbestos—maintains easy operation and tight seal to prevent leaks. Valve can be repacked under pressure when wide open.

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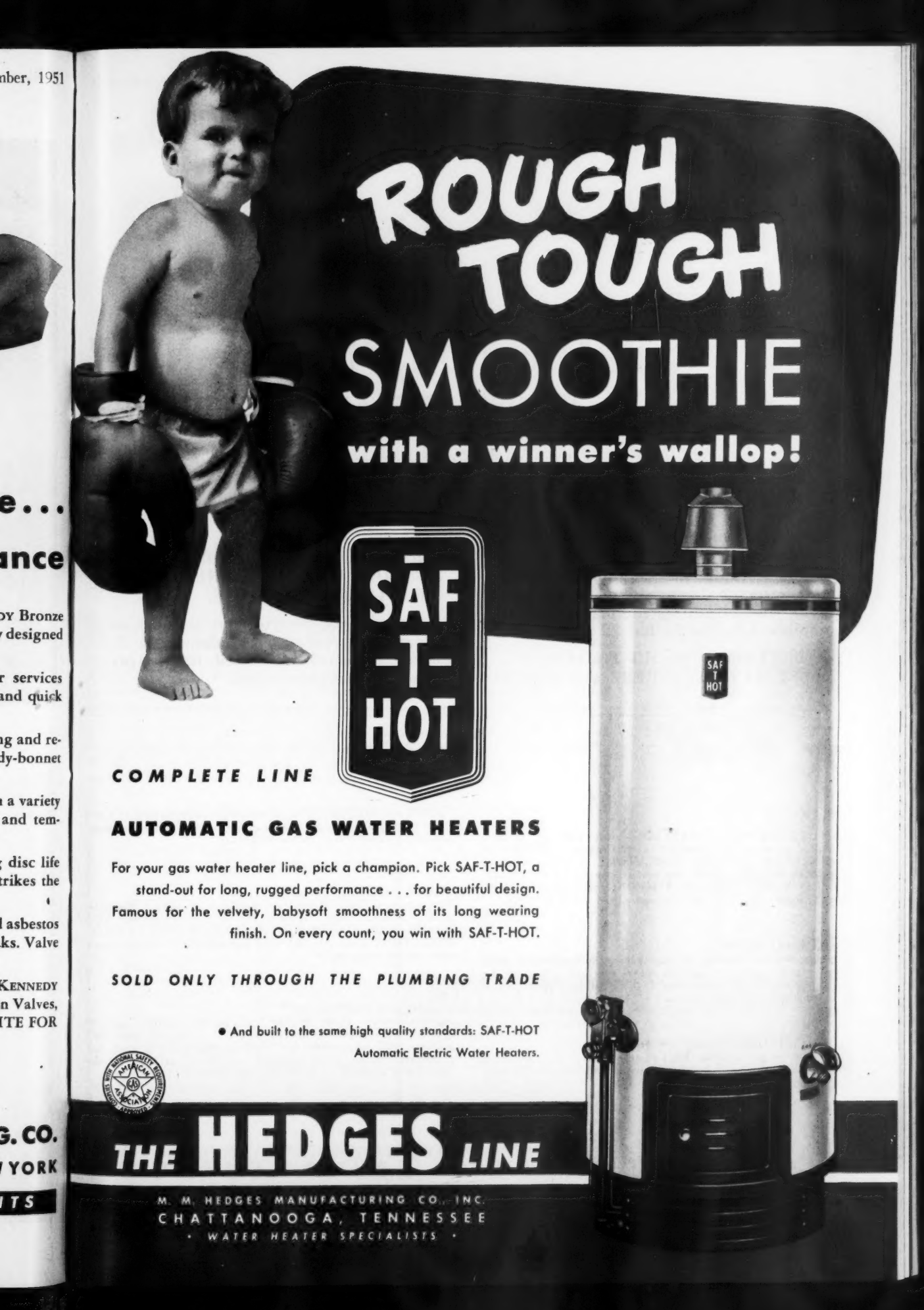
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SOLD ONLY THROUGH THE PLUMBING TRADE
• And built to the same high quality standards: SAF-T-HOT Automatic Electric Water Heaters.
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★ ANNUAL EDITION CONTAINS *5* SECTIONS FOR READY REFERENCE

SECTION 1

MANUFACTURERS' CATALOG*—over *500* of them—logically grouped by product classification. DOMESTIC *ENGINEERING CATALOG DIRECTORY is the continuous* link between you and all sources of supply in the HEATING, PLUMBING, AIR CONDITIONING, REFRIGERATION, INSULATION, VENTILATION and allied *INDUSTRIES.

SECTION 2

TABLES and RULES
A comprehensive library of engineering and technical data. Handy tables and easy-to-read charts are but a few of the *things in the 180-page section that established this volume* as a standard reference book.

SECTION 3

CLASSIFIED DIRECTORY (PRODUCT INDEX)
This 332 page section has a completely cross-indexed, alphabetized list of products with MANUFACTURERS' *NAMES and ADDRESSES. All advertisers are starred (*) and* show page reference to their catalog in the Manufacturers' *Catalog Section 1 for instant reference.*

SECTION 4

TRADE NAMES
Frequently a Trade Name is dissociated from the Manufacturer's Name. The extensive list of approximately 8200 *TRADE NAMES in DOMESTIC ENGINEERING CATALOG* DIRECTORY gives you the most complete information available *on this subject.*

SECTION 5

NAMES and ADDRESSES
***Approximately 4500 MANUFACTURERS' names and addresses* alphabetically arranged . . . complete with full *address. All advertisers are listed in* BOLD FACE *type and* reference shows page numbers of their catalogs in the MANUFACTURERS' CATALOG SECTION.

DOMESTIC ENGINEERING
CATALOG DIRECTORY

SIZE: 8½" x 11"
WEIGHT: APPROX. 12 lbs.

Not once, but twice each year—DOMESTIC ENGINEERING CATALOG DIRECTORY places at your finger tips, an unequalled assembly of up-to-date manufacturers' catalogs. The semi-annual services of DOMESTIC ENGINEERING CATALOG DIRECTORY is your assurance that the manufacturers' catalogs contained between its covers show complete, current data—the last word in accuracy.

For more than a quarter of a century, alert buyers and specifiers have saved time by using DOMESTIC ENGINEERING CATALOG DIRECTORY. They have protected themselves from the wasteful efforts that are inevitable when using loose-leaf and out-of-date catalogs.

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Heating	Frozen Food Cabinets
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Refrigerators	Refrigeration
Kitchen and Cabinets	Specialties
Domestic Laundry Equipment	Accessories

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DOMESTIC ENGINEERING CATALOG DIRECTORY
and AIR CONDITIONING BLUE BOOK
1801 Prairie Avenue, Chicago 16, Illinois

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Please enter my order for one DOMESTIC ENGINEERING CATALOG DIRECTORY at $7.50.

☐ Check for $7.50 attached. Please send postpaid.

☐ Please send my CATALOG DIRECTORY C.O.D.

Company Name .....

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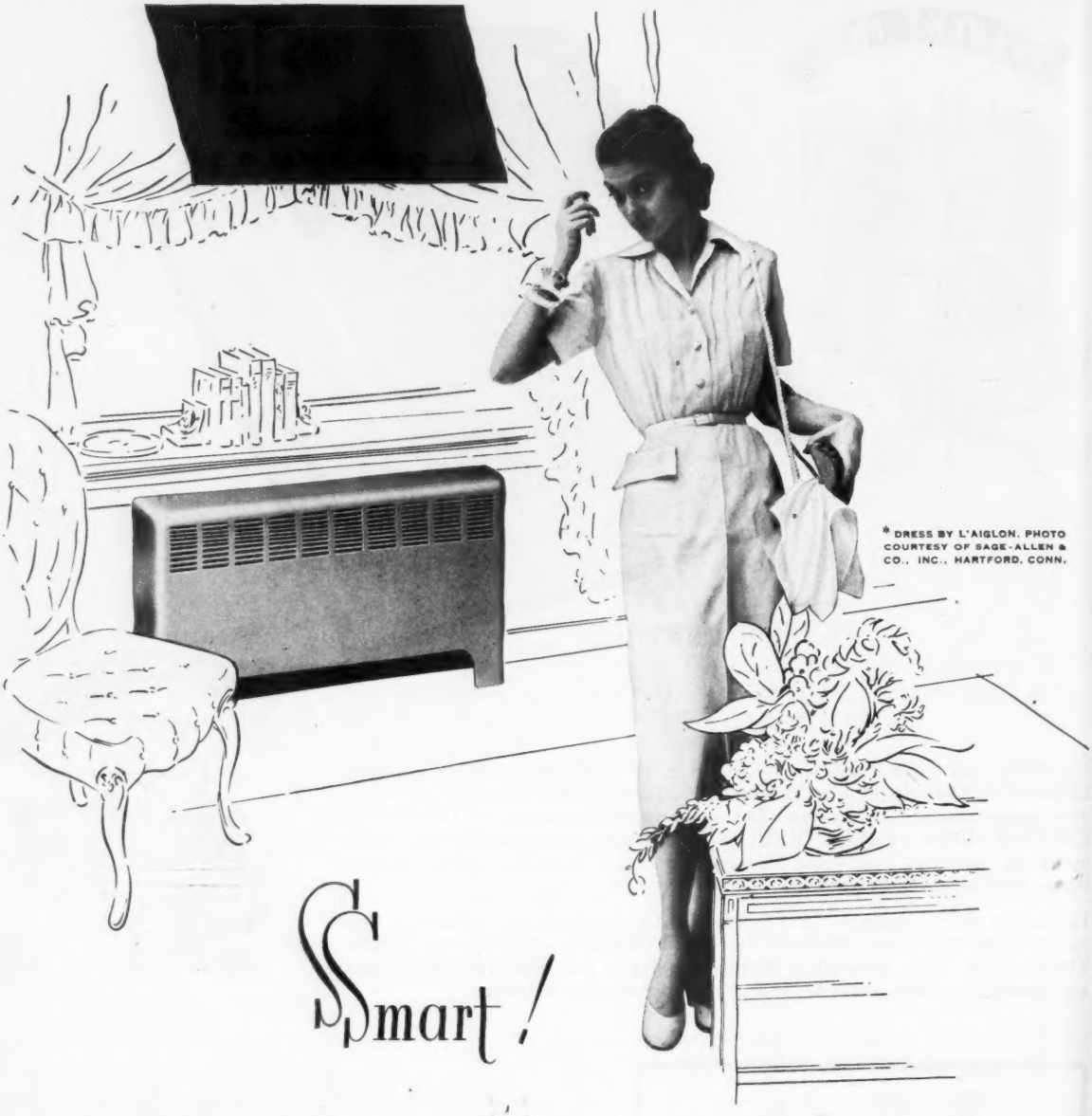
1801 PRAIRIE AVENUE

CHICAGO 16, ILLINOIS



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Smart!

Smart is milady . . . each detail in the height of fashion. Smart, too, is the home where the choice of heat distribution equipment is Tuttle & Bailey Convectors. Installed as free standing units or semi-recessed, T & B Convectors blend harmoniously with any interior design, the most modern furnishings...a graceful, flattering addition to any room.

Handsome is as handsome does, T & B Convectors are efficient in performance, economical in operation. Quick to respond to thermostatic control, heat is transmitted from boiler to rooms in a hurry and that means fuel cost savings...the constant, gentle circulation of room air provided by convection heating means even temperatures from floor to ceiling, no stratification, no drafts.

When you recommend and install T & B Convectors, you can be sure of complete customer satisfaction, a job *you* can be proud of!

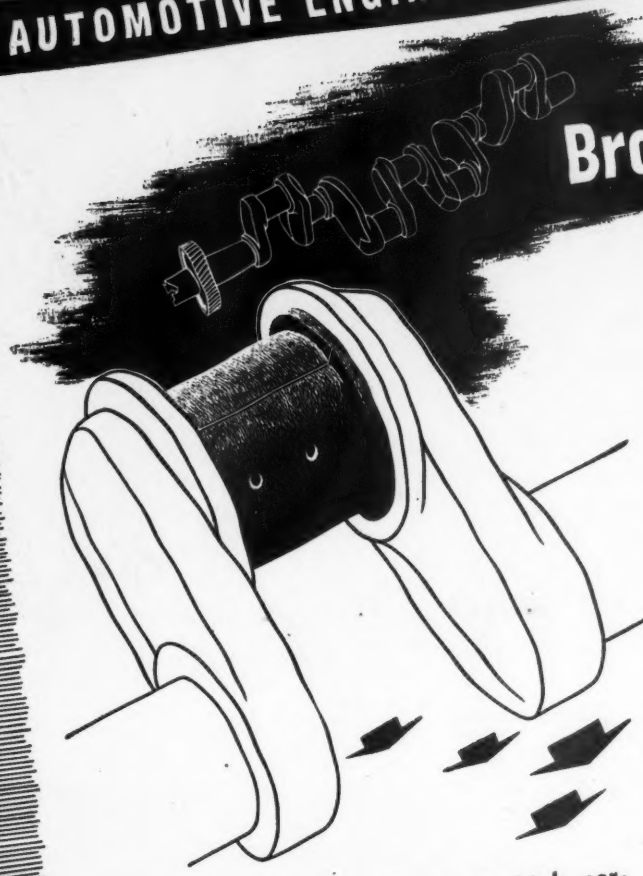
ASK YOUR JOBBER TODAY

N, CONNECTICUT

ENGINEERED PRODUCTS FOR HEATING, D VENTILATING

7TB51

AUTOMOTIVE ENGINEERS SPECIFY . . .



Bronze Bushings Where Strength And wear Resistance Are Required

Bronze bearing metals with their high percentage of lead have the plasticity necessary to permit compensation for a slight want of fit or alignment of the bearing.

Tin in bearing bronzes insures strength and wear resistance, which coupled with the plasticity imparted by lead, makes bronze the satisfactory and dependable material for bearings, bushings and related applications in the automotive industry.

Specify—LAVIN NON-FERROUS INGOT—*Quality*

R. LAVIN & SONS, INC.

Refiners of Brass, Bronze and Aluminum

3426 SOUTH KEDZIE AVENUE · CHICAGO 23, ILLINOIS

REPRESENTATIVES IN PRINCIPAL CITIES

QUALITY

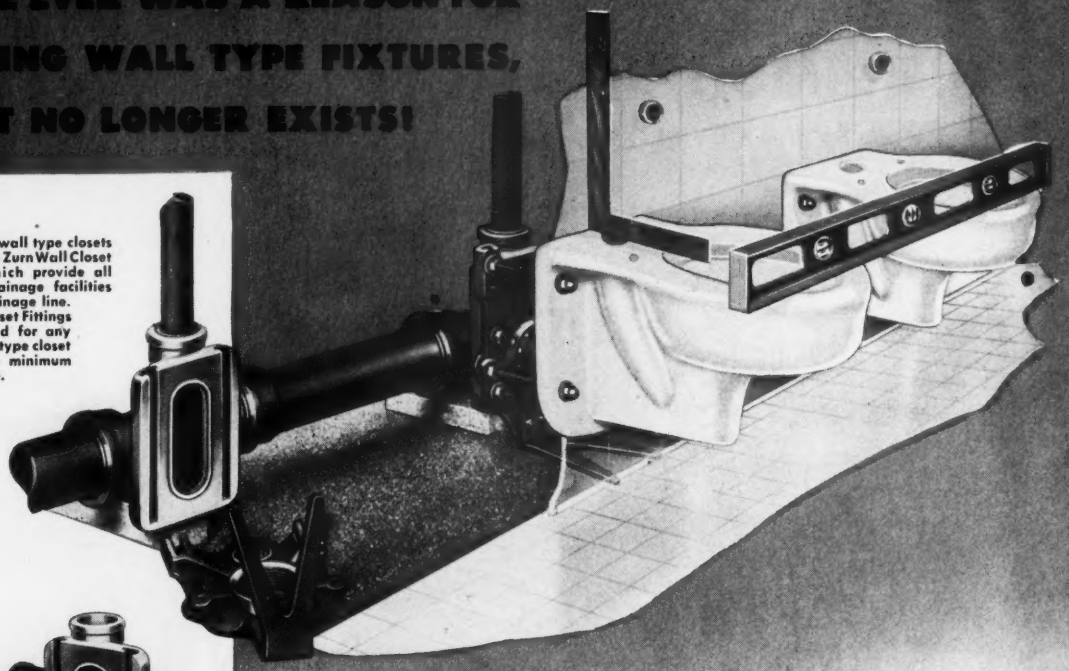
PLUMBING HARDWARE

The name Crampton has long been synonymous with the best in plumbing hardware. When the market returns to free supply we want you to remember the name that *guarantees* long service and top quality—Crampton.

GRAND RAPIDS BRASS COMPANY

DIVISION OF CRAMPTON MANUFACTURING CO. • GRAND RAPIDS, MICHIGAN

IF THERE EVER WAS A REASON FOR NOT USING WALL TYPE FIXTURES, IT NO LONGER EXISTS!



A battery of wall type closets installed with Zurn Wall Closet Fittings, which provide all necessary drainage facilities up to the drainage line. Zurn Wall Closet Fittings are designed for any make of wall type closet and require minimum of wall space.

Horizontal adjustable wall closet fitting. Figure Z-1205-SHR4.

ZURN *Found*

the Simple, Fast, Safe Way to Install Wall Type Fixture Plumbing

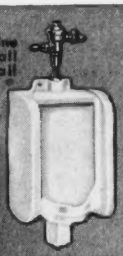
Wall type fixture plumbing gets fixtures up off the floor—marks a new era in sanitation. Clear, unobstructed floor areas make for neater, cleaner rest rooms. Washing or sweeping a floor is done more quickly, easily, economically. Wall type fixture plumbing reduces cost of rest room maintenance. Only the use of wall type fixture plumbing protects toilet facilities against premature obsolescence.

Zurn Wall Closet Fittings and Wall Fixture Carriers are engineered to support wall type fixtures—off the floor, free of the wall—safely, securely and in permanent alignment. All necessary adjustments are simple; assembly and installation are fast—no mistakes, delays or grief on the job.

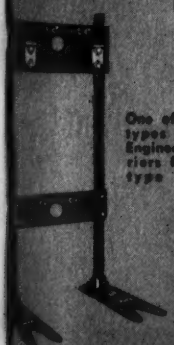
Zurn Wall Closet Fittings and Wall Fixture Carriers fit all types and makes of wall closets and wall type fixtures. Consult a Zurn representative for more details.

J. A. ZURN MFG. CO. *PLUMBING DIVISION*
ERIE, PA., U.S.A.

SALES OFFICES IN ALL PRINCIPAL CITIES



...is a complete line ...ern Engineered Wall ...ers Carriers for all ...and makes of ...ls, lavatories, ...board sinks, ster... and other wall ...ixture plumbing.

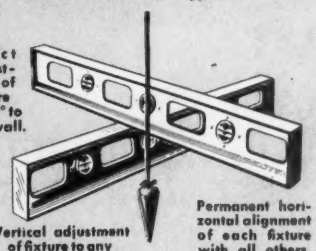


One of several types of Zurn Engineered Carriers for wall type urinals.

THE ZURN WAY

PERFECT ALIGNMENT IN ALL 3 DIRECTIONS

Obtained with Exclusive Adjustment Features of Zurn Wall Closet Fittings And Carriers...For The Support of All Types And Makes of Wall Type Fixtures



Exact adjustment of fixture at 90° to the wall.

Vertical adjustment of fixture to any required height from the floor.

Permanent horizontal alignment of each fixture with all others.

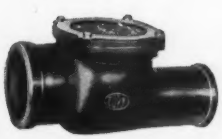
ZURN

...recognized Manufacturer of Sanitary Products for the Protection of Human Health and Modern Structures.

AREA FLOOR DRAIN

ROOF DRAIN with Internal Expansion Joint; High Velocity Drainage

Supremo Perfect Seal FLOOR LEVEL CLEANOUT

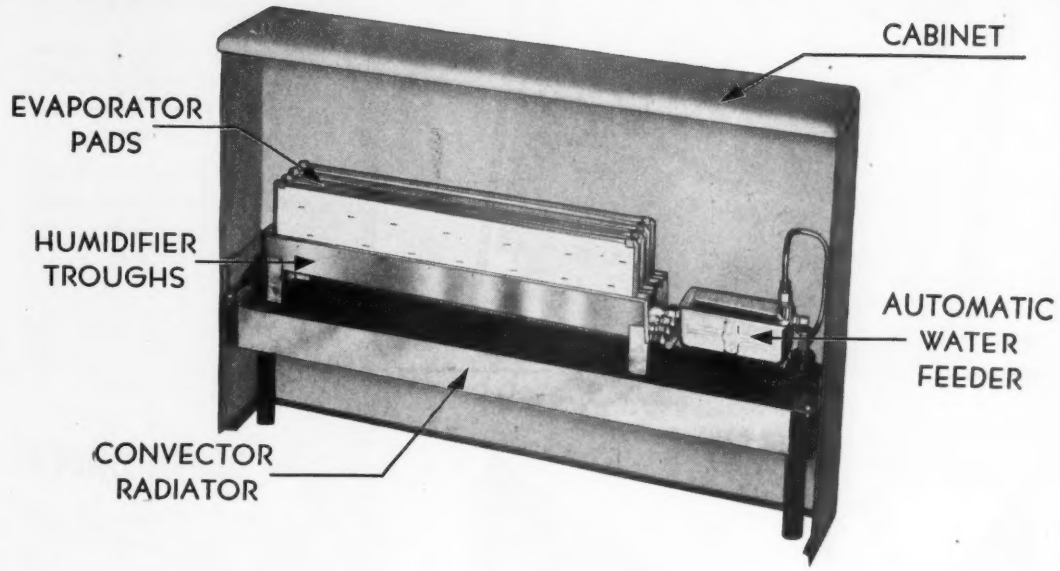


BACKWATER VALVE Non-fouling

Standard Model Cast Iron GREASEPTOR

WHEATLAND TUBE COMPANY
BANKERS SECURITIES BUILDING, PHILADELPHIA 7, PA.

NOW! AUTOMATIC HUMIDIFIERS FOR CONVECTOR RADIATORS



The only automatic humidifier on the market made especially for modern convector radiators

BIG FEATURES

- Only 3⅜ inches deep. Fits even the extremely shallow convector cabinets.
- Water is supplied directly to feeder from the convector on hot water systems. On steam installations, water is taken from nearest supply through copper tubing.
- Completely automatic. Float-controlled valve keeps water line constant.

BIG PERFORMANCE

- Maximum evaporating area. Unique design of water troughs makes every inch of this humidifier a working surface which creates more evaporating area.
- Minimum air restriction. The separate, narrow ⅜ inch troughs which hold the evaporator pads are spaced to allow free flow of heated air between the pads and on all sides of unit.

Available in both 2 and 4 trough units in 10 different sizes.

The new Maid-O'-Mist Convector Humidifiers are made in evaporating capacities of 1 to 5 gallons per day. Construction throughout is of non-ferrous metal. Easy to install. Get full information from your jobber or write us direct for complete details.

MAID-O'-MIST Inc.
HEATING SPECIALTIES

AUTOMATIC HUMIDIFIERS . . . . . AUTO-VENTS
WATER LINE CONTROLS . HEATING SPECIALTIES

MAID-O'-MIST, Inc.

3217 NORTH PULASKI ROAD . CHICAGO 41, ILL.

FOR ABOVE...

Present government regulations still allow you to install copper water tube for hot and cold water lines.

Chase Copper Water Tube's resistance to corrosion makes it the number one choice for domestic water lines.

OR DOWN UNDER

Underground piping of Type K Chase Copper Water Tube resists the double corrosive action of earth on the outside and water inside.

The easy-to-install coiled lengths of 40, 60 and 100 feet require fewer fittings . . . and its soft temper permits bending around obstructions.

...it's Chase Copper Water Tube

Since government regulations do not prohibit the use of copper for domestic hot and cold water lines, or underground service lines, it's wise to plan the use of Chase Copper Water Tube for these two important types of installation.

Chase Copper Water Tube is made in hard and soft tempers for use with both solder-joint and flared fittings.

Rustproof, corrosion resistant, easily worked, smooth interior for better flow —these are some of the reasons why Chase Copper Water Tube is ideal for long life, fine service.

Chase® BRASS & COPPER

WATERBURY 20, CONNECTICUT • SUBSIDIARY OF KENNECOTT COPPER CORPORATION

CHASE 75th ANNIVERSARY 1876 1951

• *The Nation's Headquarters for Brass & Copper*

Albany†	Cleveland	Kansas City, Mo.	New York	San Francisco
Atlanta	Dallas	Los Angeles	Philadelphia	Seattle
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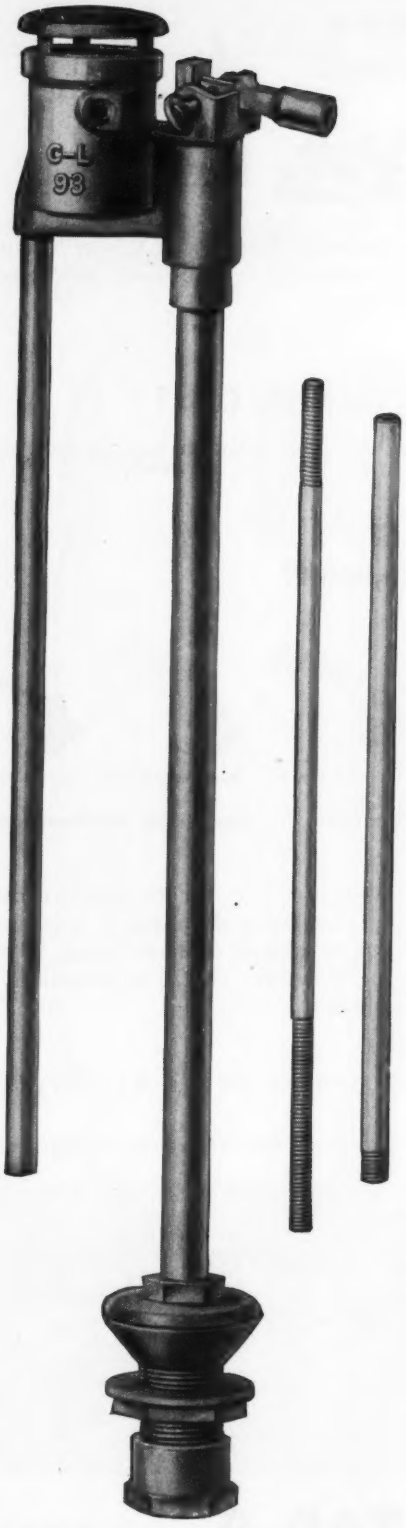
Boston	Detroit	Minneapolis	Providence	
Chicago	Houston†	Newark	Rochester†	(† sales office only)
Cincinnati	Indianapolis	New Orleans	St. Louis	



Approved Anti-Siphon

INBRACO

FLOAT VALVE

The accompanying illustration shows our *NEW* No. 93 Approved Anti-Siphon Float Valve equipped with rubber "O" Ring Plunger Packing and *Nylon* seat.

This fitting is silent in operation—requires no adjustment—snap action closing under high pressure.

Packed in individual box with rod and refill.

Individual security INSURES FREEDOM and LIBERTY. & Social Security leads to Regimentation and LOSS OF LIBERTY.

It's a privilege to live in a Republic.
Only God can help the people who live in Democracies.

John A. Johnson
President

THE INDIANA BRASS CO., Inc.

FRANKFORT - - - - INDIANA

VULCAN HAS THE ANSWER!

---- for COMMERCIAL AND RESIDENTIAL HEATING REQUIREMENTS

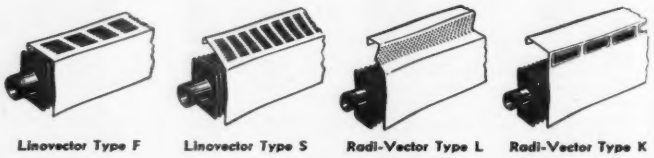
Is Vulcan Adaptable to All Types of Buildings?

Yes. Both Vulcan Baseboard Radi-Vector (Home heating) and Vulcan Standard (Commercial) require no alterations or extra calculations for installing.

Does Vulcan Cut Installation Costs?

Yes. Vulcan in-line fin tube radiation requires less pipe and fittings.

Is Vulcan Easy to Install?



Linovector Type F | Linovector Type S | Radi-Vector Type L | Radi-Vector Type K

Commercial Radiation | Residential (Baseboard Radi-Vector)

Yes. Vulcan is as easy to install as a length of pipe. It comes cut *to desired length, ends threaded or chamfered for quick assembly.* Sturdy, patented Vulcan hangers eliminate much of the hard work of installation. Attractive covers, in several styles, are designed for easy hanging.

DISTRIBUTORS IN PRINCIPAL CITIES

Availability of Material Subject to Government Regulations.

Is Engineering Information Easily Available?

Yes. Vulcan catalogs give complete detailed information on Residential Baseboard Radi-Vector and Commercial Standard Radiation. *Catalog 53A features new I=B=R ratings* for Baseboard Radi-Vector. *Catalog 125* has complete engineering data on Vulcan Standard.

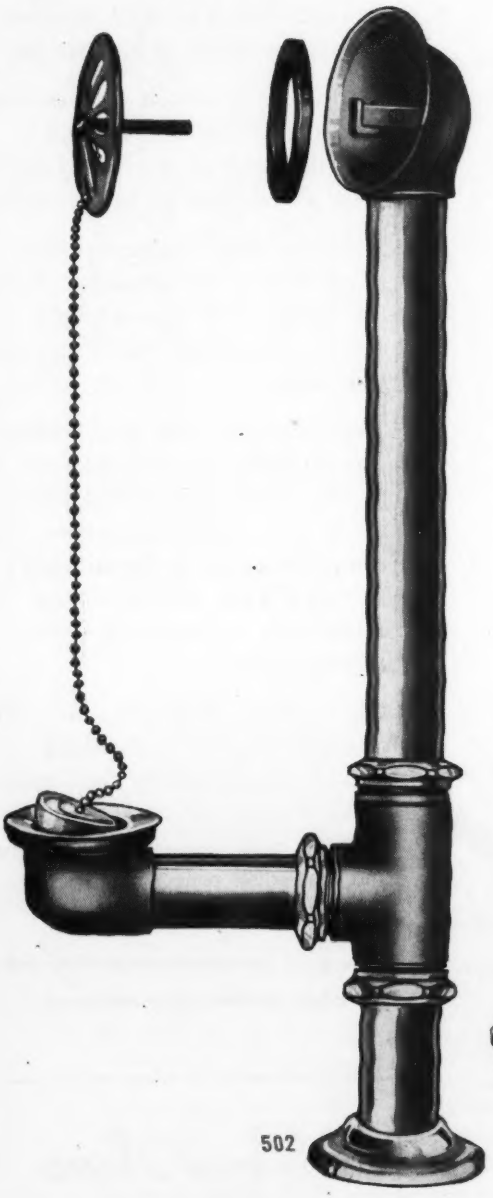
The VULCAN RADIATOR Company

14 Francis Ave., Hartford 6, Connecticut

OVER TWENTY-FIVE YEARS A LEADER IN FIN-TUBE RADIATION

Bridgeport connected bath drain and overflow

builds good will



502

Bridgeport's Connected Bath Drain and Overflow is a quality product for lasting utility and attractive beauty. The self-adjusting head assembly permits easy installation on any pitch of tub.

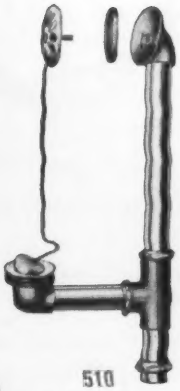
Comes in a variety of styles and three standard gauges of metal tubing to meet all plumbing codes throughout the country. Finished in satin chrome or polished chrome for easy cleaning.

There are many special built-in quality features in the Bridgeport line of plumbing brass goods—traps, sink strainers, continuous wastes, supply pipes, TRAXROD* shower curtain rod, etc. They'll help you profit from satisfied users. *Reg. U. S. Pat. Off.

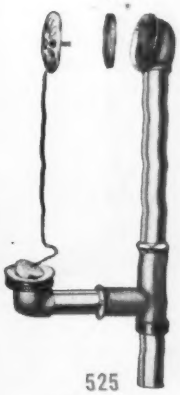
BRIDGEPORT BRASS COMPANY

BRIDGEPORT 2, CONN. • ESTABLISHED 1865

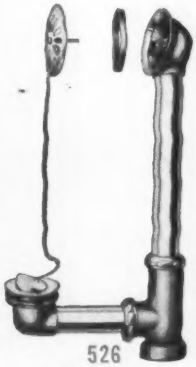
Mill at Bridgeport, Conn., and Indianapolis, Indiana
In Canada: Noranda Copper & Brass Ltd., Montreal



510
California Type



525
Universal Type

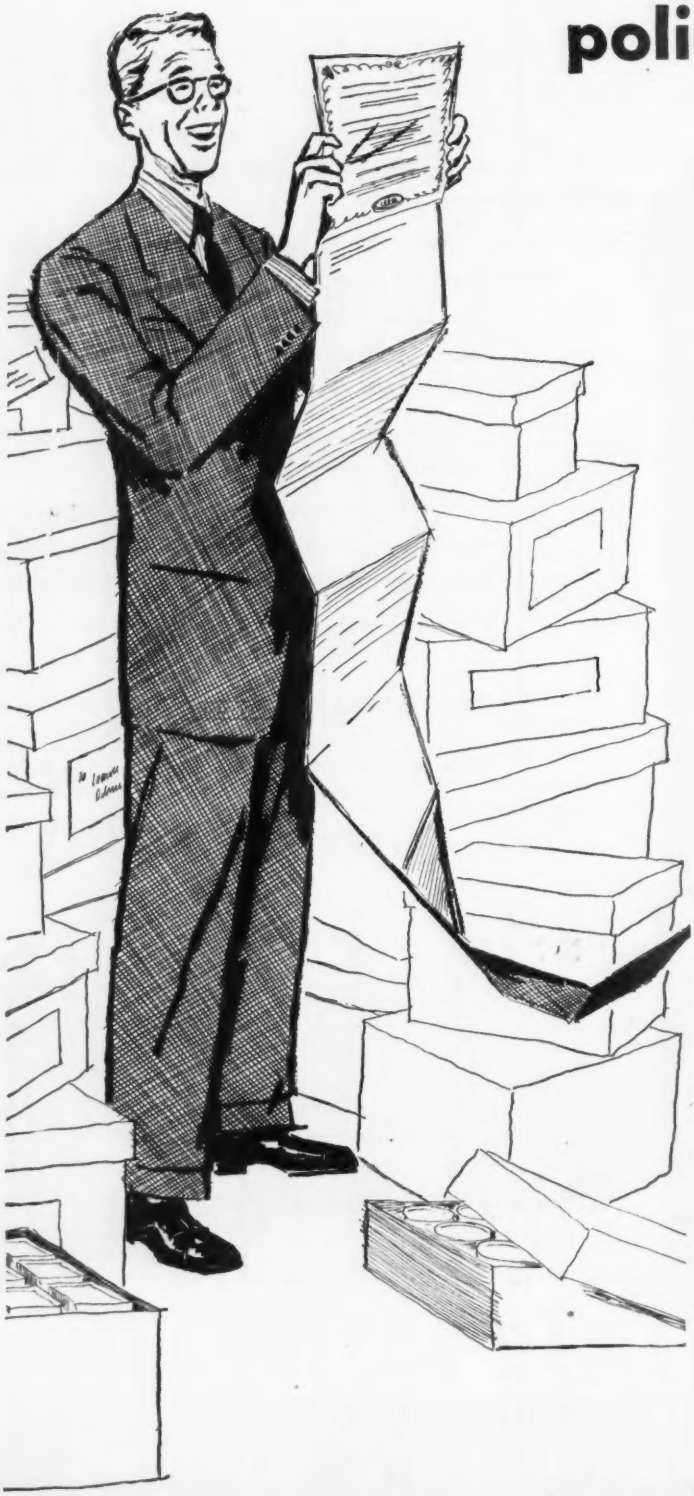


526
Chicago Type

THE BRIDGEPORT LINE IS CARRIED BY QUALITY-MINDED WHOLESALERS

BRIDGEPORT BRASS

Did you get your big free insurance policy this week?



You did – if you received shipments of well-known brands of merchandise!

You got the protection and guarantee of all the advertising done each year, that promises top quality and value – and makes good on its promises.

More than that, you automatically benefit from a vast pre-selling job that has reached your own customers and convinced them *before* they enter your store.

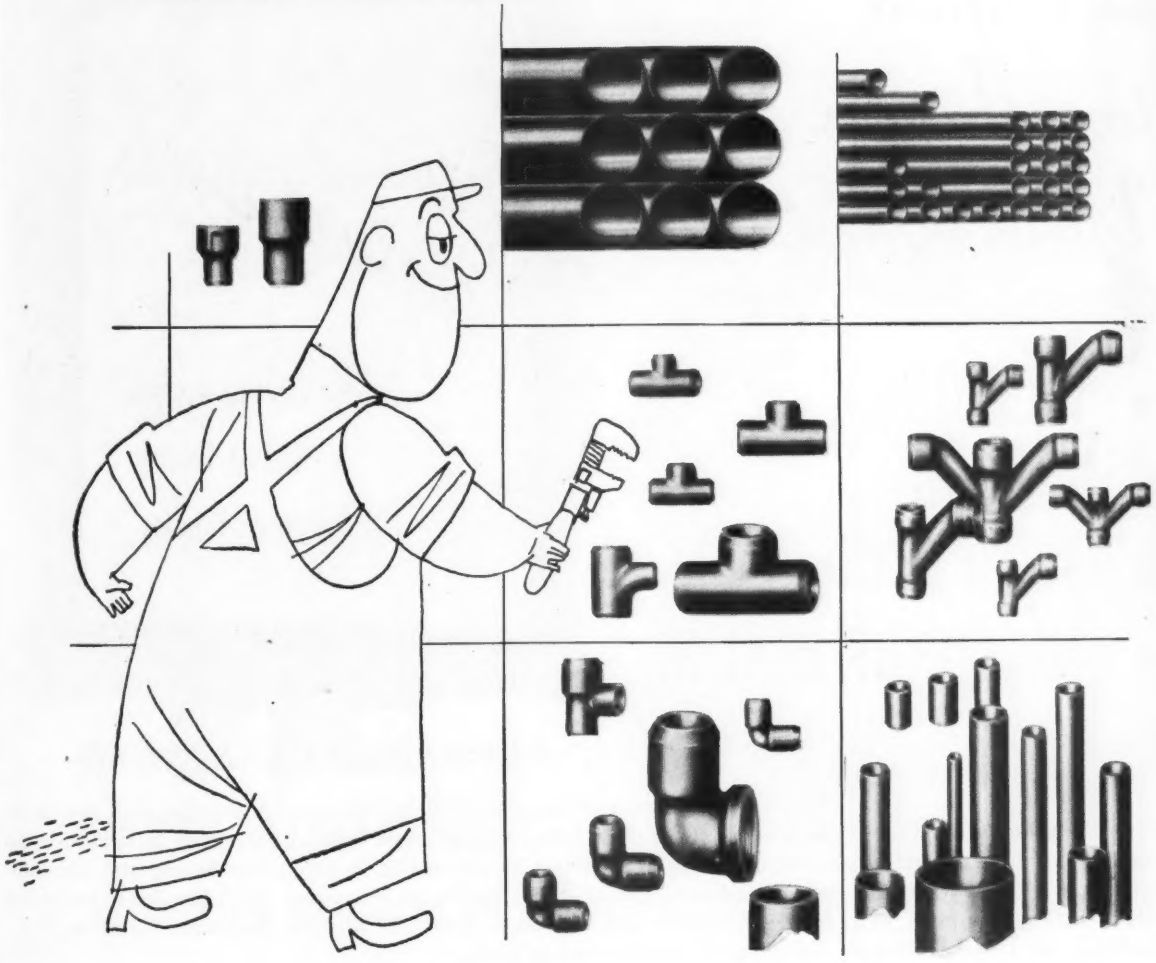
That's why you make your business stronger when you keep the force of *famous brand names* behind your selling. Let your customers know they can get from *you* the brands they know and want. Why be content – or expect them to be content – with anything less?

The consumers of America are in favor of known brands – prefer them 8 to 1 by actual survey. Darn good evidence that your turnover will be faster, your year-end profits higher – and that you'll collect handsomely on that free insurance!

Give your customers what they ask for – it's bad business to substitute.

Brand Names Foundation
INCORPORATED
A non-profit educational foundation
37 WEST 57 STREET, NEW YORK 19, N. Y.

PIPE DREAM . . . 1951



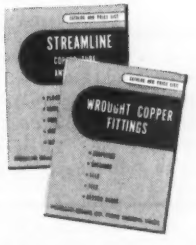
Since the available supply of copper for non-defense work has become so limited, there just isn't a great deal we, or anyone else can do, these days, to fill your wants for MUELLER BRASS STREAMLINE copper tubing. We can say only this, for certain . . .

We can fill your orders for most STREAMLINE fittings.

We will not cut down quality of STREAMLINE fittings or tube regardless of material shortages.

We will do our best to help you solve any installation problem you ask us about.

As soon as copper becomes more plentiful we will be the first to see that you get the tubing and fittings you want. You can then make the kind of home, commercial and industrial STREAMLINE copper installations you know are the finest money can buy.



68

See your jobber for further information or write for catalogs S-351 and W-251 describing our complete line of STREAMLINE *wrought copper and cast bronze fittings.*

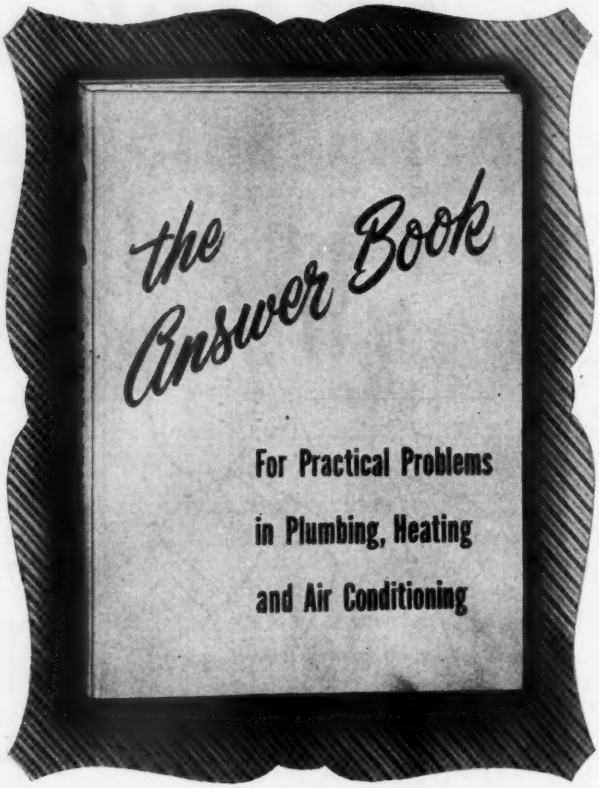
MUELLER BRASS CO. STREAMLINE PRODUCTS

MUELLER BRASS CO. PORT HURON 6, MICHIGAN

Designed to Answer Your Questions

ON

- **PLUMBING**
- **HEATING**
- **VENTILATING**
- **AIR CONDITIONING**



REVISED and ENLARGED

THE previous edition of the ANSWER BOOK proved popular with the practical plumbing and heating man because it supplied him with the basic type of reference information so vital in the design, installation and servicing of all types of plumbing, heating, ventilating and air conditioning jobs. Now, in this revised and enlarged edition, additional reference data has been included which makes this book of even greater advantage to men in this field who are desirous of placing their business on a more efficient, time-saving, profit-making basis.

Here is a book we believe you will want to make a definite part of your shop library . . . a book you'll want to keep at your fingertips to assist you in many of the phases of your daily business activities. Get your copy without delay. Use the convenient order coupon below.

What You Get in the New ANSWER BOOK

Just as its title implies, the ANSWER BOOK is designed to supply you with the answers to the problems you encounter in your business. It contains practical data which you can use to estimate, design, layout, install and service all types of plumbing, heating, ventilating and air conditioning jobs. Consists of 256 pages, size 8½ x 11. Includes 256 charts and blueprints, 98 pages of reference tables and rules and a new section on baseboard heating. Section headings include the following: Tables and Rules . . . Air Conditioning . . . Fans and Duct Design . . . Refrigeration . . . Steam and Hot Water Heating . . . Flow of Steam in Pipes . . . Automatic Controls . . . Pipe Covering . . . Intermediate Steam Pressure . . . Boilers and Combustion . . . Miscellaneous. Price, Postpaid, $3.50 per copy.

RETURN COUPON TODAY!

DOMESTIC ENGINEERING CO.
Book Dept., 1801 Prairie Ave., Chicago 16, Ill.

Send me my copy of the ANSWER BOOK by return mail postpaid. I am enclosing $3.50 in ☐ check; ☐ money order; ☐ cash—to cover the cost of this book.

☐ Also send copy of your book circular.

NAME .....

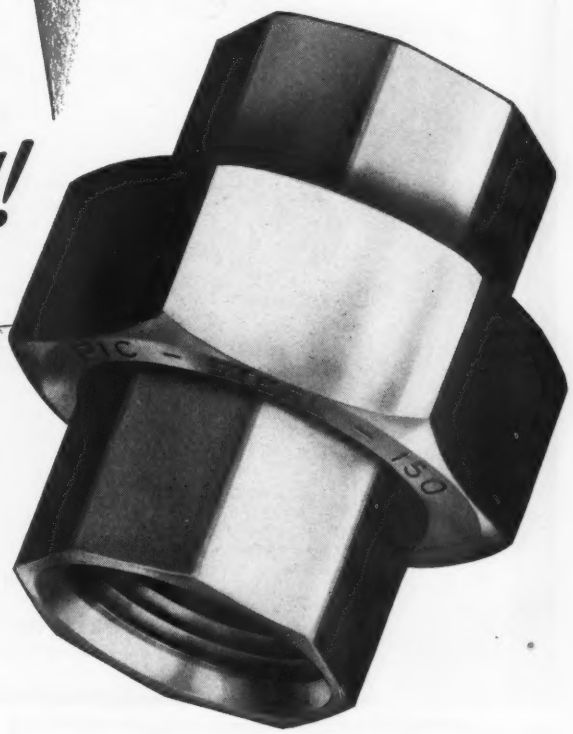
ADDRESS .....

City .....**Zone** .... **State**.....

FREE . . .

booklet describing 28 of the best books on plumbing, heating and air conditioning. Books that can spell PROFITS for YOU. Check the coupon at left and mail it today. No obligation.

Good Looking!
Extra Strong!
Non-Porous!
Zinc Plated Overall!



PIC
STEEL UNIONS
are the choice of contractors everywhere

BRIGHT AND ATTRACTIVE!

These smart-appearing 150 lb. steel unions look as if they belonged on even the newest equipment — and they *do!*

UNUSUALLY STRONG!

Ends are constructed of heavy steel pipe coupling stock. That's why Pics have the built-in stamina to resist the most rugged wrenching and other punishment.

NON-POROUS!

Seepage is no problem because this same coupling stock safeguards against porosity.

REAL RUST PROTECTION!

The rust protection is a thorough 100% job — *even the threads are zinc plated.*

GET TIGHT JOINTS QUICKLY!

Tight joints come easily, *naturally* . . . without strain or fuss. Special wedge-type bronze seat and precision machining of both joint surfaces are the reasons why.

USE OPEN-END WRENCHES!

Ends of Pic Unions are uniformly flat sided for speedy installation in tight corners or elsewhere with open-end wrenches.

PRICED SENSIBLY!

Plumbing and heating contractors like Pics because their prices are *in line!* They cost less than a galvanized union — no more than a black malleable union.

Write today for Samples!

DART UNION COMPANY
THURBERS & EDDY STREETS, PROVIDENCE 5, RHODE ISLAND

Please send me samples of PIC in the ..... " size.

Name.....
Title.....
Company.....
Street.....
City..... *State*.....

The results are SENSATIONAL

Available in 2-lb. containers . . . packed 12 per carton . . . and a 2-lb. average dose does the job!

. . . NO OTHER METHOD OF ROOT REMOVAL AND PREVENTION CAN MATCH IT!

We only put HERCULES R-D root destroyer on the market this spring, and already users across the country are getting evidence of sensational results!

Plumbers find they can remove roots *completely* from sewers and storm drains with *phenomenal* ease—and without harming a single leaf on trees and shrubs.

R-D crystals dissolve at the point of root obstruction. There the chemical, absorbed by the root, kills the root and causes it to decompose and wash away. This is the only method which has gained national recognition in the field of sanitary engineering.

Yes, R-D affords the *easiest, safest, most economical* and *most efficient* means of removing root obstructions ever devised. It makes any costly, clumsy, dangerous and time-consuming methods hitherto employed *completely obsolete*. No special equipment is required. No digging is necessary.

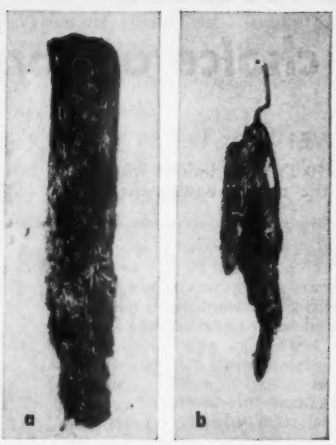
Moreover, although HERCULES R-D is extremely powerful, it is *absolutely safe to handle*. IT IS NOT A CAUSTIC SODA and does not contain lye or acids of any kind.

You can obtain R-D at your wholesaler's . . . or, if it is not yet in stock, order direct and send us his name and address.

R-D can be used in Fiber, Tile, Plastic, Clay, Concrete, Cast Iron and any other type Sewer Lines. It is safe to use in all systems including Cesspools and Septic Tanks.

Why HERCULES R-D is best:

1. R-D HAS BEEN FIELD-PROVEN FOR YEARS BEFORE BEING MARKETED—The major ingredient of R-D has been field-tested for over 12 years by a large municipality.
2. R-D IS EASY TO APPLY—It is simply poured as is from the container. No mixing or stirring required.
3. R-D IS SAFE—It does not expose the user to danger from burns, gases or violent reactions. Does NOT harm trees or shrubs.
4. R-D IS ECONOMICAL—Root-free sewers and drain lines are assured by only two treatments with R-D annually.
5. R-D IS HIGHLY EFFICIENT—It is the ONLY KNOWN TREATMENT which kills main roots not actually submerged in the liquid. Hair roots extending into the liquid absorb sufficient R-D to kill main roots growing within the sewer.



a—Root not treated with HERCULES R-D. Root mass 4-ft. long and 8-ins. in diameter completely blocked pipe and practically stopped flow.

b—Same root, a short time after initial treatment. Disintegration is in an advanced stage, and flow in the pipe is no longer obstructed.

Why lug 25 lbs. of chemicals to a root removal job, when 2 lbs. of HERCULES R-D — the amazing, NEW Root Destroyer — will do the work better and with least labor and cost to you?

The Right Hand of The Plumbing Industry for over 36 Years.

HERCULES CHEMICAL CO., Inc.

332 CANAL ST., NEW YORK 13, N. Y.

S-D SANITARY-DASH

for immediate delivery

SANITARY-DASH

LEGS and LEGS & TOWEL BARS

It's an unbeatable combination! S-D quality . . . a standard in the industry since 1922 *and* S-D economy . . . the watchword of every fine plumbing job.

S-D chrome plated Legs and Legs & Towel Bars are individually wrapped and boxed . . . delivered gleaming and sparkling. A complete assortment of fittings assure perfection of installation—just be sure to specify name of manufacturer of the enamelware. Choose from the complete S-D line—a quality and price for every job . . . but to be sure of the best—choose S-D!

for vitreous chinaware

for castiron enamelware

SINCE 1922 OVER A QUARTER CENTURY OF DEPENDABLE AND TRUSTWORTHY SERVICE

REPRESENTED BY

P. C. Abbott & Co. Richmond 19, Va.
H. Baron New York, New York
R. R. Barril, Inc. San Juan 17, P. R.
Farwest Sales Co. Seattle, Washington
R. H. Gaebler Co. St. Louis 8, Mo.
A. S. Gibbons Co. Dayton 6, Ohio
L. J. Grossman Co. Cleveland 15, Ohio
Sam Hexter Los Angeles 48, Cal.
Mitchell Love Co. Philadelphia 30, Pa.
Shamrock Plbg. Sales Co. Chicago, Illinois
Clarence Slade Portland, Oregon
Slaybaugh-Thompson Co Denver, Colo.
Watson Agencies Toronto, Canada
Barnet Weiner Boston, Mass.
Wingard Company Fort Worth, Texas
Morris Zwiren Kew Gardens Hills, N. Y.

Follow the IDEAS of the Leaders

. . . And BE a Leader

The leaders in this industry built their business with IDEAS . . . ideas on how to arrange their showrooms, display their products, influence the public, supervise employees.

With enough appropriate ideas (and the will to use them) any contractor-dealer can, *himself,* be a leader . . . whether in plumbing and heating, or appliances.

Fortunately (for those who would be the future leaders) there is now available the biggest fund of practical ideas ever brought together in one place in this industry. They can be yours in the new book, "2000 and 1 Prize-Winning Ideas,"—the book which reports and pictures the ideas used by 181 leaders who won awards in last year's Merchandising Contest.

It's a big book—200 pages, each 9x12 inches. It contains 800 photographs and other illustrations. You can get an idea of its scope by noting the chapter headings. For example, if you are interested in appliances, you will gain many good ideas from chapters on the following subjects:

Appliances
Kitchens
Dishwashers
Disposal Units
Laundries
Ranges
Refrigerators
Specialties

Naturally, you are also interested in the latest ideas for selling your full range of products, at a profit. Therefore, there are chapters on:

Plumbing
Heating
Oil Burners
Gas Heating
Air Conditioning
Water Systems
Water Heaters
Water Softeners
Faucets

And then, finally, there are 44 chapters of ideas on merchandising, marketing, management and service which apply to all the products you sell, and to your operation as a whole. These chapters cover:

Institutional Advertising
Human Interest Advertising
Anniversaries
Grand Openings
Radio Advertising
Television
Phone Book Advertising
Cooking Schools
Seasonal Appeals
Signs
Signs on Job
Symbols
Slogans
Labels
Gimmicks
Calling Cards
Photo Cards
Literature and Blowups

FILL OUT AND MAIL COUPON TODAY

HOW is it possible to obtain and accumulate 2,001 tested and proved ideas . . . ideas which will help you sell more?

DOMESTIC ENGINEERING did it through the Merchandising Contest. We offered, as first prize a $2,500 truck. 117 manufacturers gave their products. 136 wholesalers gave $1,300 in cash. All were brought together in a prize list amounting to $18,000 in retail value.

All contractor-dealer subscribers of DOMESTIC ENGINEERING were eligible to enter. Entry forms were received from more than 2,000. In addition to the form, contestants were required to answer a detailed questionnaire; to furnish photographs, advertising matter, radio scripts, etc., and to supply a description of their successful business-building methods.

A committee of leading manufacturers, wholesalers and sales experts judged the entries. Photographs and other exhibits from the winning entries occupied several thousand square feet at an industry wide exhibit.

This was the material from which the book, "2,000 and 1 Prize-Winning Ideas," was drawn. Its 200 pages illustrate and describe the ideas which make Domestic Engineering Dealers pre-eminent as merchandisers of mechanical equipment for home, industrial, commercial, housing and institutional buildings.

You can draw upon the combined business experience of 3,989 years (total business age of 181 winners) in the new DOMESTIC ENGINEERING IDEA BOOK.

in Modern Merchandising

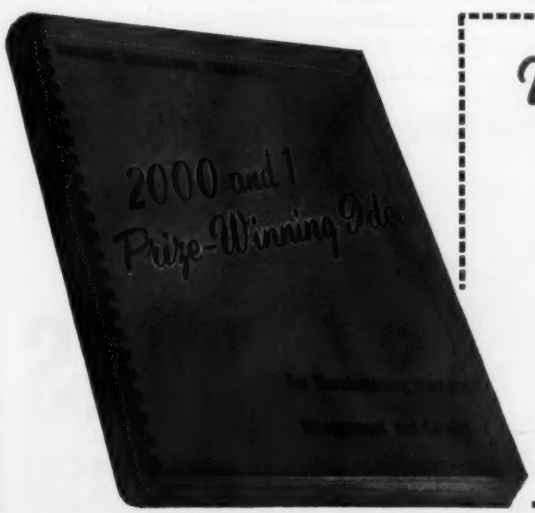
Show Displays
Contests
School Activities
Sports
Public Relations Stunts
National Programs
Civic Activities
Brochures
Welcome Wagon
Annual Service
Customer Incentives
Employee Incentives
Prospecting
Job Proposals
National Recognition
Publicity
Contest
Trucks
Reception
Offices
Shops
Yards and Docks
Uniforms
Procedures
Remodeling
Service

ORDER YOUR COPY OF THE BIG IDEA BOOK NOW

This book is already at work helping to make the leaders of tomorrow. It can be of great help to you, too, whether you are already a leader or are "on your way up." To get your copy of "2,000 and 1 Prize-Winning Ideas", fill out the coupon below and return it to us with your remittance.

The book will come to you, postpaid and satisfaction guaranteed.

DOMESTIC ENGINEERING PUBLICATIONS
1801 PRAIRIE AVENUE CHICAGO 16, ILLINOIS



Yes I want the new book, "2,000 and 1 Prize-Winning Ideas." It is understood that, if not satisfied, I may return the book within ten days and full purchase price will be refunded. My remittance of $5.00 to cover cost of the book is enclosed.

Name .....

Company .....

Street Address .....

City ..... Zone.... State.....

Send to
DOMESTIC ENGINEERING PUBLICATIONS
1801 PRAIRIE AVENUE, CHICAGO, ILLINOIS

O-B FREE-SWIVELING ACTION

No. 3 LINE COMPOSITION DISC VALVE
100 lbs. W.S.P.
150 lbs. W.O.G.
Available in globe type, with or without waste, angle type also available.

REDUCES DISC DAMAGE

O-B *Composition Disc* Globes and Angles shut off with a smooth, non-grinding action that lessens *disc damage and guarantees* better valve performance.

The section view shown above tells the reason why. You will notice that the disc holder *is attached to the valve stem with a free-swiveling connection.* As the valve is closed, the disc stops turning on first contact with *the raised seat. The free-swiveling disc holder* permits further tightening without causing *damage or excessive wear to composition* discs. As a result, discs last longer and valves remain leaktight for many years *without requiring disc replacement.*

To insure complete customer satisfaction, buy O-B composition disc valves for your next *plumbing or heating job. A full line of globes* and angles with either screw-type or solder-type ends is available from your local Ohio Brass Company distributor. See him for any *of your plumbing and heating supplies.*

OHIO BRASS CO. MANSFIELD, OHIO

4066-V

Ohio Brass VALVES

BRONZE GLOBES ANGLES GATES AND CHECKS

OVAL AMERIVENT

Double Wall..Dual Purpose

As a WALL-VENT

OVAL AMERIVENT *features* **SAFETY . . . EFFICIENCY . . . ECONOMY.**

SAFE . . . because Oval Amerivent is approved by Underwriters Laboratories as a Type B gas wall-vent for installation with ⅜" ***clearance*** *from combustibles.*

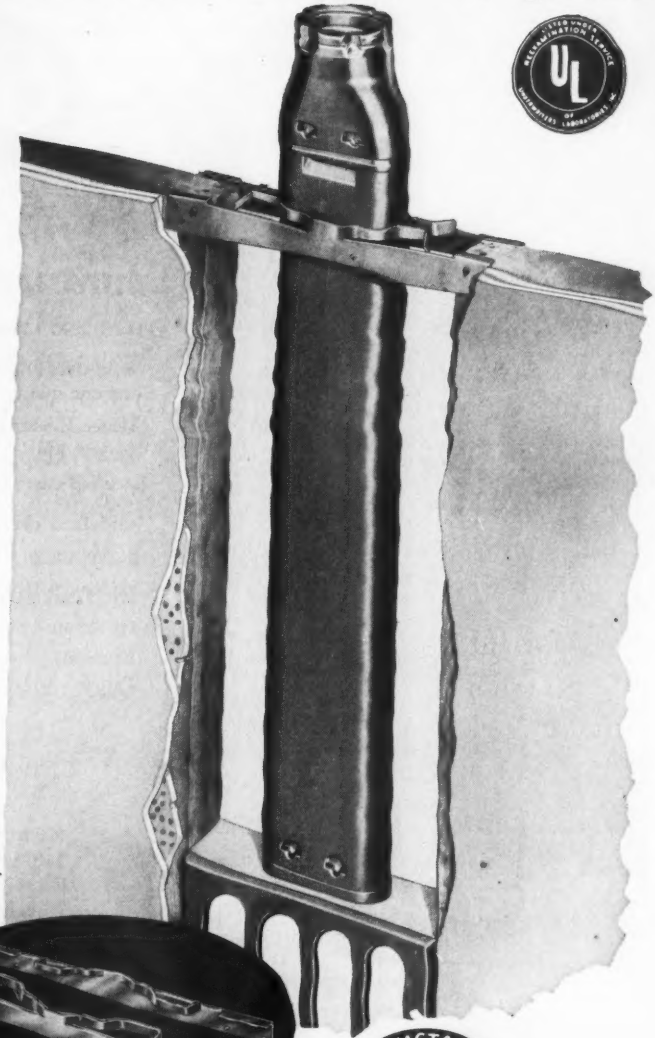
EFFICIENT . . . because full capacity Oval Amerivent provides a ***"hotter inside — cooler outside"*** *flue pipe which* promotes ideal draft.

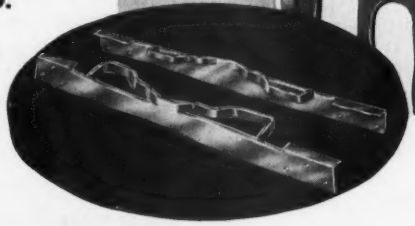
ECONOMICAL . . . because lifetime, aluminum Oval Amerivent installs between 2" x 4" studs, thereby eliminating furring or thicker studding.

Balance of wall-vent above ceiling plate may consist of an Oval-to-round Adapter and Round Amerivent — or continue with Oval Amerivent Flue Pipe.

As a FLUE PIPE

Oval Amerivent is approved by Underwriters Laboratories as a Type B gas vent to install with 1" clearance from combustibles. The patented coupler ends "snap-lock" into a rigid, secure, gas-tight joint by simply pressing together — **NO SCREWS — NO MASTIC — NO CEMENT IS REQUIRED.**





OVAL AMERIVENT PLATE SPACERS

Positive ⅜" clearance is assured by Oval Amerivent Plate Spacers. Installs easily—quickly—centers pipe tightly in place. Also functions as a plate strap—meets FHA specifications.

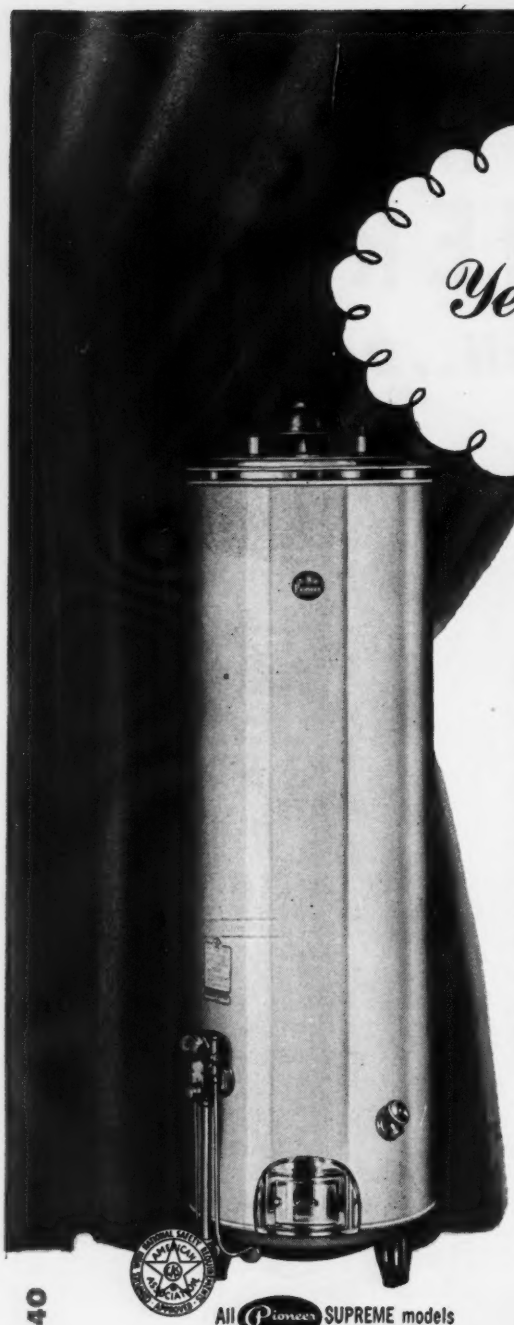
See your wholesale plumbing and heating supplier for these and other American Metal Products — or write for complete information and catalog

AMERICAN METAL PRODUCTS
AMERIVENT
FLUE PIPE & FITTINGS

AMERICAN METAL PRODUCTS, INC.

Makers of AMERICAP — the "Natural Draft" Vent Cap

2911 COMPTON AVENUE · LOS ANGELES, CALIF.



Year After Year It's

Pioneer

SUPREME
AUTOMATIC GAS WATER HEATER

LASTS AND LASTS—MINIMUM CALL BACKS—NO HEADACHES

With the Pioneer SUPREME Gas Water Heater you sell just one quality—the finest! Behind every SUPREME Water Heater stands Pioneer's 30 years reputation for beauty, efficiency and dependability that assure you satisfied customers, minimum service calls.

And into every SUPREME Water Heater, Pioneer builds these 8-way high-tested features:

High gallonage recovery • Protected against rust and corrosion • Sturdy construction • Full heat-retention • Economy of operation • Longer tank life • Safety • Quick, clean hot water for less.

1926 1927 1928 1929 1930 1931 1932 1933 1940 1941 1942 1943 1944 1945 1946 1947 1948 1949 1950 1951

All Pioneer SUPREME models are A.G.A. approved for all gases.

Pioneer makes a complete line of Gas Water Heaters for all budgets in 20 to 100 gallon capacities...also a complete line of Pion-Aire Gas Wall Circulators, from 10,000 to 50,000 B.T.U. input. 4 strategically located shipping centers, one near you, assure prompt deliveries and service.

10 YEAR WARRANTY PLAN
Unconditional 1 year guarantee for commercial use only

FOR 30 YEARS

Pioneer WATER HEATER CORPORATION

3131 San Fernando Rd., Los Angeles 65, Calif.

You can always find a wholesaler

Within your easy reach there is a wholesaler willing to supply the materials you need and also provide helpful advice and cooperation to carry on your work.

Because many of the things you normally carry are in short supply and you are finding it difficult to meet the demands of your customers, it should be quite apparent that a closer relationship with your wholesaler can prove advantageous.

As you know, your wholesaler is identified with many trade associations. (You have probably seen their emblems on his stationery or advertisements.) You benefit indirectly through these contacts, for he can pass on to you the information about all the new developments, and thereby help you also to keep abreast of the times.

Under today's extraordinary conditions—with the need for things being greater than the available supply—attention to maintenance must be intensified in order to prolong the life of the materials and equipment now in service.

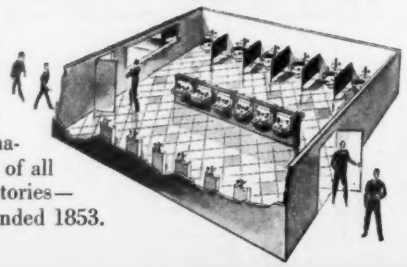
Materials that must be replaced should be of high quality to keep maintenance requirements at a minimum. That refers to Wolverine tube, too. If you install Wolverine, you can be sure of long service and minimum maintenance.

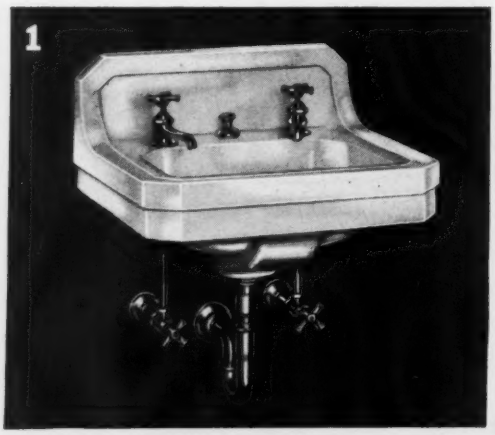
WOLVERINE TUBE DIVISION, Calumet & Hecla Consolidated Copper Company, Inc., Manufacturers of seamless, nonferrous tubing, 1435 Central Ave., Detroit 9, Mich. Plants in Detroit, Mich. and Decatur, Ala.

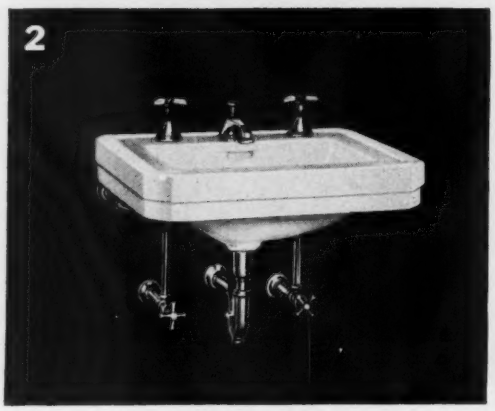
BUY FROM YOUR WHOLESALER

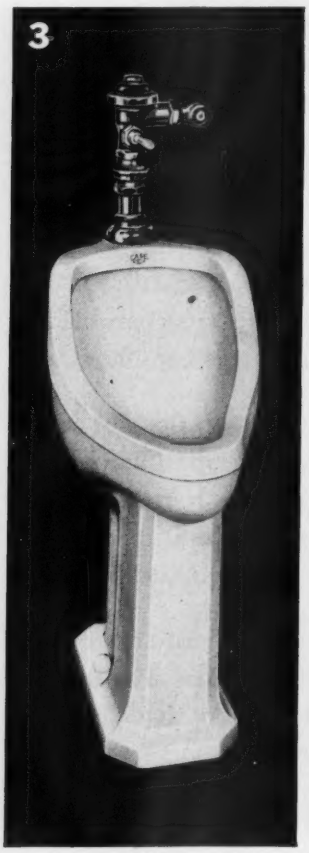
MAXIMUM service...MINIMUM maintenance

Carefully selected washroom fixtures, easy to install, save your clients time and money in building-maintenance, repair and replacement. No less important is the public goodwill they create year after year for owners and tenants. Case fixtures are among today's most popular units because they are built for long, hard service. Their vitreous china-ware and mechanical excellence are adding lasting value to structures of all types. See your Case distributor—listed in Classified Telephone Directories—or write W. A. Case & Son Mfg. Co., 33 Main St., Buffalo 3, N.Y. Founded 1853.









Case Fixtures for modern washrooms...

1 AVON* #900. Wall hung vitreous china lavatory with back. Square basin, front overflow, anti-splash rim.

2 CASE WYNGATE* #600. Lavatory. Square basin. Anti-splash rim, heavy wall hanger.

3 CASCO* #2335-A. Vitreous China Siphon Jet pedestal urinal with chrome plated flush valve, vacuum breaker.

4 CASE WALJET* #2100. Wall Hung Siphon Jet Closet with hard rubber open front seat, concealed check hinge.

5 CASE CASCO* #2325-A. Vitreous China Wall Hung Washout Urinal with shields, integral flush spreader and spud.

All Case plumbing fixtures are of durable acid resistant vitreous china, with fittings especially designed. Available with chair carriers.

Case *Fine Vitreous China*

*PATENTED

At Press Time

December • 1951

ARE YOU GETTING WHAT YOU PAY FOR in conducting specialty selling efforts? The chances are 10 to 1 that you are not, according to a survey conducted by the Salt Lake Tribune-Telegram.

When the "slump" following the Korean war outbreak came along, the Salt Lake City newspaper sent out trained researchers to pose as appliance prospects—and the results proved that the "average" appliance salesman was missing a lot of sales. Only 31 percent of the salesmen contacted gave the interviewer a personal business card and made any attempt to arrange a demonstration or some type of home call. The remaining 69 percent showed markedly little interest in whether the customer bought or not, once they learned she was not willing to sign up immediately.

Plumbing and heating contractors can learn how it should be done by following the series entitled "How a Salesman Is Made" currently running in DOMESTIC ENGINEERING.

ATOMIC PLUMBING IS NOT ONLY HERE—IT'S HERE TO STAY! At least that's the opinion of Detroit Contractors Bruce Wigle and George Chafy who have both successfully used radioactive isotopes to direct hard-to-find leaks in radiant panel heating systems. You'll probably agree after reading this interesting feature. It's on page 90 in this issue.

SHIPMENTS OF AUTOMATIC GAS WATER HEATERS amounted to 157,000 in October. This brings the total for the first ten months of 1951 to 1,672,000, according to Edward R. Martin, director of marketing and statistics of the Gas Appliance Manufacturers Assn. During 1950, October shipments were 235,100 and the ten-month total 1,954,000.

But, October's figure rose 30,600 units over the 127,100 shipped during September, compared to a September-to-October increase of 12,500 last year.

"HEATING CONTRACTORS NEVER HAD IT SO GOOD!" is the title of an article in this issue (see p. 134). With all the depressing news of material shortages, and today's uncertain business conditions, it is sometimes good to look upon the pleasant side of the picture—and there definitely is a pleasant side for the heating contractor.

New products, refinements in old ones, manufacturers' sales aids, association sponsored "short courses" and new installation techniques are among the many advantages offered today's heating contractor.

In short, this timely feature considers the many strides made in the industry which enable the contractor to do a better and easier selling job.

WHEN FARM FAMILIES BUY ELECTRICAL APPLIANCES . . . and they buy a lot of them . . . they go to the dealer who handles their favorite brand, who provides adequate service and who has a reputation for business integrity. Price and trade-in allowance get only slight consideration.

These and other important factors in farm family purchasing habits are revealed in a survey made by the research department of the Curtis Company for the National Electrical Manufacturers Assn.

From the survey, it was evident that the buying impulse generated within the family itself. Retailers made little or no attempt to solicit their business. Farm families not satisfied with their dealer relations suggested that these dealers employ better trained men,

make periodic checks of equipment, hold demonstrations, operate a better repair service and send customers information about new products.

YOU MAY WONDER . . . how a plumbing and heating contractor can lose money and make money at the same time. But it can be done and is being done in our own industry every year. A field check reveals that only about ten percent of the members of this industry departmentize sales; in other words, list the sales, cost of sales and proportionate overhead separately, to arrive at the net profit in each department.

The main reason for by-passing departmentalization is the assumption that it is a difficult process. But . . ." it ain't necessarily so," say the experts. An article in the forthcoming January issue of DOMESTIC ENGINEERING will show how it can be done and how it can stop unnecessary losses.

AGGRESSIVE MERCHANDISING AND PRODUCTION-LINE INGENUITY, without resort to "war emergency" models, will enable the gas appliance industry to meet public demand for gas home-heating equipment, ranges and water heaters in the first half of 1952, Harold Massey, assistant managing director of GAMA told DOMESTIC ENGINEERING last month.

Further details on the 1952 outlook for gas heating and appliances are given in the feature on page 101.

Massey urged all manufacturers to accelerate their merchandising programs, pointing out that "in other times of stress, when deliveries were threatened by similar emergency conditions, companies with aggressive sales policies fared especially well."

AN INSURANCE PLAN FOR OIL BURNERS is the business building offer made by one service minded contractor. An article on page 127 gives the details of a service contract that has built volume and increased customer satisfaction.

Readers can easily get some valuable pointers on how to manage their own service departments.

MANY BUSINESSMEN WHO FAIL do not fail because their accounts are uncollectable, according to creditmen. They fail because they can't collect their money when they need it, or they tie up too much of their working capital in receivables which they cannot liquidate in time to meet their own obligations. As a result, creditors crack down and the businessman is in trouble.

An article on page 92 entitled "Don't Let This Happen to You!" explores the ramifications of this unhealthy condition and tells how the trouble can be avoided.

THE 1940'S WERE A DECADE OF CRISIS AND CHANGE according to housing research conducted by the Housing and Housing and Home Finance Agency. Many factors of economic resurgence, war, rapid urbanization,and postwar boom affected both housing demand and housing supply, the agency's 1950 Housing Census Report indicated.

Some of the statistics uncovered by the report are of prime interest to plumbing and heating contractors. For example: 20 percent of the nation's homes lack private inside toilets; 23 percent lack private installed bathtubs or showers; 4 percent have piped water but no toilet or bath and 2.3 percent do not even have piped running water!

And these statistics represent only homes within urban districts; farm dwellings are not included. Looks like the market is still far short of the saturation point!

BIG BUSINESS FROM LITTLE JOBS MAY GROW is the lesson to be learned from the Scott Company's operation on the West Coast. This feature, entitled "This Contractor Gets the Big Jobs by Emphasis on the Little Ones," tells the success story of a contractor who started from a hole-in-the-wall type of operation and became in a relatively few years "the biggest mechanical contractor on the West Coast."

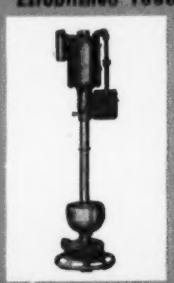
To learn how he did it, turn to page 98.

Penberthy automatic electric Sump Pumps are easier to sell

Sump pumps are installed for protection . . . protection against water damage . . . protection of health. No sensible buyer wants to gamble on protection of this sort. He wants to be sure he gets protection when he pays for it. Hence, the unparalleled reputation for reliability of Penberthy Automatic Electric Sump Pumps makes them easier to sell.

Once your prospects know about the copper and bronze construction—the motor specially impregnated to resist moisture—the dependable switch—the scientifically balanced impeller and the many other Penberthy features—they want Penberthy Automatic Electric Sump Pumps.

Penberthy Injector Company
DETROIT 2, MICHIGAN
Established 1886 • *Canadian Plant, Windsor, Ontario*



DIVISION OF THE BUFFALO-ECLIPSE CORPORATION

PENBERTHY EXPLOSION-PROOF AND TOTALLY ENCLOSED SUMP PUMPS

Motor and switch have Underwriters' approval for hazardous locations including gasoline, solvent vapors, metal and grain dust, natural gas, etc. Write for Specification 4929.

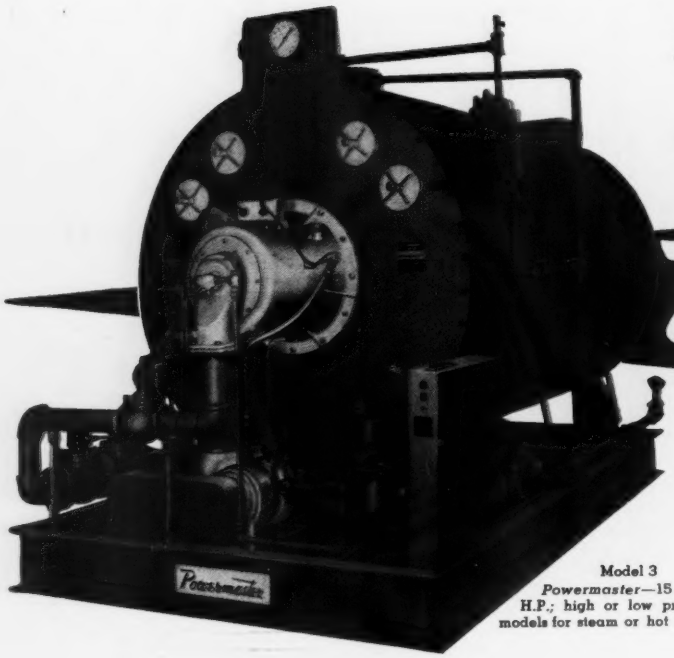
MADE IN 7 SIZES

Constructed of Copper and Bronze Throughout

Carried in stock by jobbers everywhere

4122

reduce your steam costs 3 ways with the automatic Powermaster



Model 3
Powermaster—15 to 500 H.P.; high or low pressure models for steam or hot water.

Now you can make your own comparison. No other steam generator gives you all of the *Powermaster's* advantages. A special burner design (patent applied for) reduces your cost of hot water and steam for processing or heating. *Powermaster* is the only self-contained steam generator that offers you—

1. *Full boiler efficiency* at 30% to 100% of capacity. You get fuel savings in slack periods as well as during peak loads.

2. *Less time* (and money) spent for boiler clean-up because *of complete fuel combustion.* (Plant studies show that you clean the Powermaster steam generator less than *other units under average conditions.)*

3. *You take advantage* of low fuel rates by changing from oil to gas (or gas to oil) in a matter of minutes. No fuel *shortage worries, either.*

Write for your free copy of this catalog

It gives you the complete story of the *Powermaster* Steam Generator . . . ease of installation, construction details, automatic controls and fuel saving features. Just write for a copy of Catalog 1218.

ORR & SEMBOWER, INC., *Established 1885*

930 Morgantown Road, Reading, Pennsylvania

only the Powermaster® *gives you all 3 advantages*

For heating of plants, institutions, apartments, etc. the *Powermaster* is giving outstanding results throughout the world. To get firsthand information about this modern steam or hot water generator ask for the address of the installation nearest to you.

Merry Christmas

and a HAPPY NEW YEAR

from your

CAPITOL friends

CAPITOL FITTINGS ARE ALL PACKAGED NICE ENOUGH TO LOOK GOOD UNDER A CHRISTMAS TREE

COUPLINGS — NIPPLES — UNIONS — RADIANT HEAT FITTINGS
FURNACE COILS — WELL SUPPLIES — STEEL PIPE FITTINGS

CAP CAPITOL
MFG. & SUPPLY CO.
COLUMBUS, OHIO

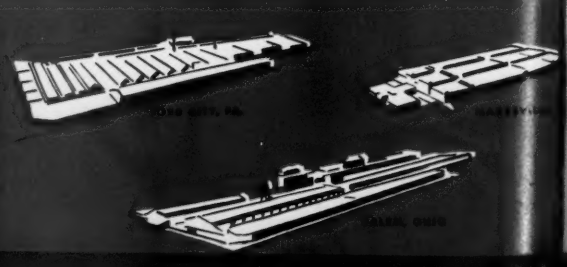
PLUS VALUE FOR YOUR CUSTOMERS...

Plus Profit for You!

Whether they're buying an automobile . . . a beefsteak . . . a television set . . . or a bathtub, Mr. and Mrs. America want "something better" and are willing to pay more for it, provided they are convinced of its extra value. There's an abundance of extra value built into the Legation Bath . . . and you can realize substantial extra profits by selling it to your customers. It's easy to show them that the Legation's extra features . . . the convenient end-seat, the flat safety bottom, the low rim-seat (6" wide, 16" high) . . . afford extra utility. These features, along with the top-quality and beautiful finishes that only Eljer offers, make this fixture a money-maker for you. *Start telling your customers about the Legation now.* For complete information see your Eljer Distributor or write Eljer Company, Ford City, Pennsylvania.

It pays you, it pays us—because we specialize in Plumbing Fixtures and Brass

ELJER



Between Ourselves

December • 1951

HIGHLIGHTS OF THE MONTH IN OUR INDUSTRY

We're Miles Ahead!

"In no country in the world has the plumbing industry attained the standard of public appreciation which it deserves; in the U.S., however, the industry comes closer to it than anywhere else."

So said S. M. Gilmour, secretary of the Master Plumbers Assn. of Victoria, Australia, in a visit at the office of the Plumbing and Heating Industries Bureau in Chicago.

"You people are miles ahead of us and Great Britain in everything pertaining to the plumbing industry," Mr. Gilmour said. He also performs secretarial work for the Master Plumbers Assn. of the Commonwealth of Australia with nearly 3,000 members.

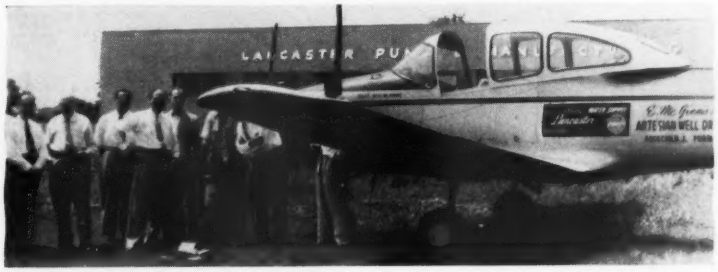
A Record for Service?

Contractor Dave McGinnis of Elwood McGinnis and Sons, Absecon, N. J., may recently have established a record for emergency service to a pump customer.

One morning a customer of the McGinnis Company telephoned that he was in urgent need of a deep well jet pump. None was available from wholesalers' stock. However, McGinnis is not only a pump expert, but also an experienced flier. He called the Lancaster Pump and Mfg. Co. of Lancaster, Pa., and ascertained that they could immediately furnish a pump of the type required for the emergency. Because Lancaster's new administration building is located directly across from an airport, Contractor McGinnis' flying skill was well adapted to meet the situation.

The same morning that he received his customer's call, Dave McGinnis landed his plane practically on Lancaster Pump's doorstep. The pump was waiting for him. By that afternoon, the pump was installed on the customer's premises and everything was under control.

The photo below shows the pump ready for loading at the airport in front of Lancaster Pump's new administration building.



LETTERS TO THE EDITOR

HEATING ARTICLE SCORES

Philadelphia—We have just received the November issue of DOMESTIC ENGINEERING and wish to congratulate you on the excellent article on perimeter heating which appeared on pages 166 and 167.

We would like very much to obtain twenty-five or thirty copies of this article if they are available. Could you advise us?

JOHN P. MOORE
Peirce-Phelps, Inc.

• *Copies of the article are on the way; glad you liked it!—Ed.*

CALLOUSED TO MOST!

Fort Wayne, Ind.—Concerning your November issue . . . I especially noted the cover and the appliance section and I read it the minute it hit our mail desk. I guess the cover design caught my eye.

You know, at least 200 trade journals cross the account executives' desks here every month. We get pretty calloused to most of them.

However, I'll have to admit I always read your magazine because there is *MORE* news and *MORE* usuable merchandising material in DOMESTIC ENGINEERING than in the other trade journals.

We need more "DOMESTIC ENGINEERINGS!"

PAUL W. GOTSCH
Willis S. Martin Company.

LOANED HIS OUT . . .

Providence, R. I.—I consider your articles on "Oil Burner Servicing" very necessary to the operation of my business. However, I have loaned a number of my copies to friends of mine who apparently feel the same way since they fail to return them.

Therefore, I would like to know if I can secure all of them in pamphlet form when it is compiled.

WILLIAM COLLISON

• *So far, the oil burner servicing series is not available in booklet form. However, copies of the 23 articles are being sent to Contractor Collison.—Ed.*

RIGHT MAN IS IMPORTANT

Tulsa, Okla.—In commenting on your article "How A Salesman Is Made," I'd say that outside salesmen are needed all the time if you want to keep out in front of the other fellow.

Right now we have two salesmen who push appliances more than

(Please turn to top of next page)

(Continued from preceding page)

anything. There's plenty of construction work but the competition on other lines is terrific; you really have to get in there and pitch. We get a certain amount of store traffic that results in floor sales but to realize any volume at all you need outside salesmen. Our appliance business runs probably 10 percent of our gross volume.

However, I'd like to say this: you can't just take anybody, say he's a salesman and send him out. It just doesn't work that way. The right man can increase the sales volume and really promote the firm —but men like that are few and far between. Those men, when you find them, are invaluable. Finding them is the problem.

O. G. WATT

BOOKKEEPING HEADACHES . . .

Canton, Ohio—In your November issue I read an article on bookkeeping headaches ("An Aspirin for Your Bookkeeping Headaches," p. 102).

In my case, I am satisfied with my present bookkeeping system but I still don't know if I'm doing as well as I should. Your article stated that the accounting firm referred to would, at the end of a given period, advise the contractor how his business compared with comparable firms throughout the country.

This is a detail I am very much interested in and would like to know if this portion of the service is available to contractors.

H. G. ZIMMER

• It is our understanding that the "Mail-Me-Monday" service is a "package deal." However, Reader Zimmer's question is being referred to the "Mail-Me-Monday" people for a clarification of this point.—Ed.

TRUCK LETTERING IDEAS

Hartford, Conn.—As a subscriber to DOMESTIC ENGINEERING, I'd like to avail myself of your services with reference to a problem of having my new truck lettered. The truck is a 1951 Dodge panel-type in dark green. I would like information as to type of lettering, colors, and design in order to advertise my operation in as efficient a manner as possible.

If you have any plans for fitting out the interior of a truck with bins for fittings and tools, I'd appreciate a little help in this matter, too.

RICHARD G. CORCORAN

• The trucks shown below may suggest a solution to Reader Corcoran's problem. They feature attractive lettering, effective use of symbols and slogans, and all of them are painted in bright, eye-catching colors. Color, incidentally, is largely a matter of personal preference. To sum up, however, one must consider the following facts: the proper color combinations (white lettering on green might be this contractor's answer), the correct use of color areas, outlook regarding upkeep, ease of repair and truck use.—Ed.

Edward Mellwig, Philadelphia, Pa.

A. O. Reed, San Diego, Calif.

F. T. Emory, Pacific Beach, Calif.

Montgomery Heating Co., Covington, Ky.

W. W. Ellett, Richmond, Va.

Schlegel Plbg., Palo Alto, Calif.

ANYONE INTERESTED?

Buenos Aires, Argentina—We are interested in manufacturing gas-fired air conditioning units designed for home use here in the Buenos Aires area, since it seems to be impossible to import them from abroad.

We are, however, insufficiently equipped with technical information and up-to-date developments in this field and are, therefore, enlisting DOMESTIC ENGINEERING'S aid in locating a manufacturer who might be interested in a South American market.

GEORGE A. DODDS

YOU'RE WELCOME!

New York—We wish to thank you for sending us copies of the fine articles from DOMESTIC ENGINEERING which we have requested from time to time.

Your kind cooperation in this matter is deeply appreciated.

SEYMOUR SCHERZER
American Economic Committee for Palestine, Inc.

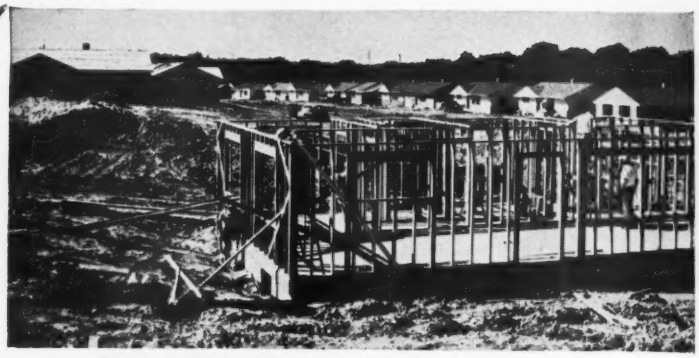
INFORMATION PLEASE!

Nampa, Ida.—We are now remodeling a building for our new showroom and would appreciate any information that will help us with our displays, signs, etc. Are there any more of your Showroom Books available?

H. W. PIPKIN

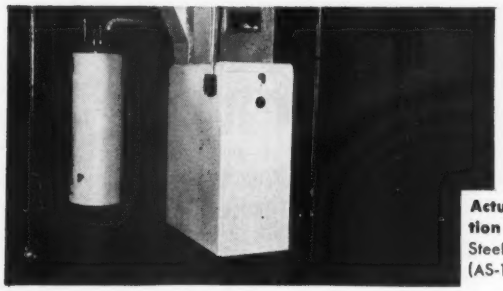
• A copy of the Showroom Book, a few of which are still available, is being forwarded to Mr. Pipkin.—Ed.

ALL 115 UNITS of this Amvets Project heated with RICHMOND Model AS-12-G



Rockford, Illinois Amvets Project — Architect: Charles Boettcher
Heating Contractor: Alga Reece Sheet Metal Co.
Heating Wholesaler: Place Brothers—**General Contractor:** Peter Larson

One of 115 housing units sponsored by the Amvets World War II Association



Actual basement installation of Richmond Gas-Fired Steel Winter Air Conditioner (AS-12-G)

There were sound reasons for using the Richmond AS-12-G steel winter air conditioner for all the homes in this project. Quality construction—heavy-gauge steel heat exchanger for longer life . . . de luxe white enamel jacket (easy to keep clean) that looks good in finished basements and playrooms . . . dependable performance—AGA approved . . . factory-assembled horizontal unit—that means it's fast and easy to install.

The Richmond AS-12-G fitted perfectly into the needs of these 115 homes (expected to expand to 250). Here, as in so many of the country's other high class developments, Richmond is a logical choice. Whatever your heating requirements, you can count on Richmond's wide selection of units to do an outstanding job.

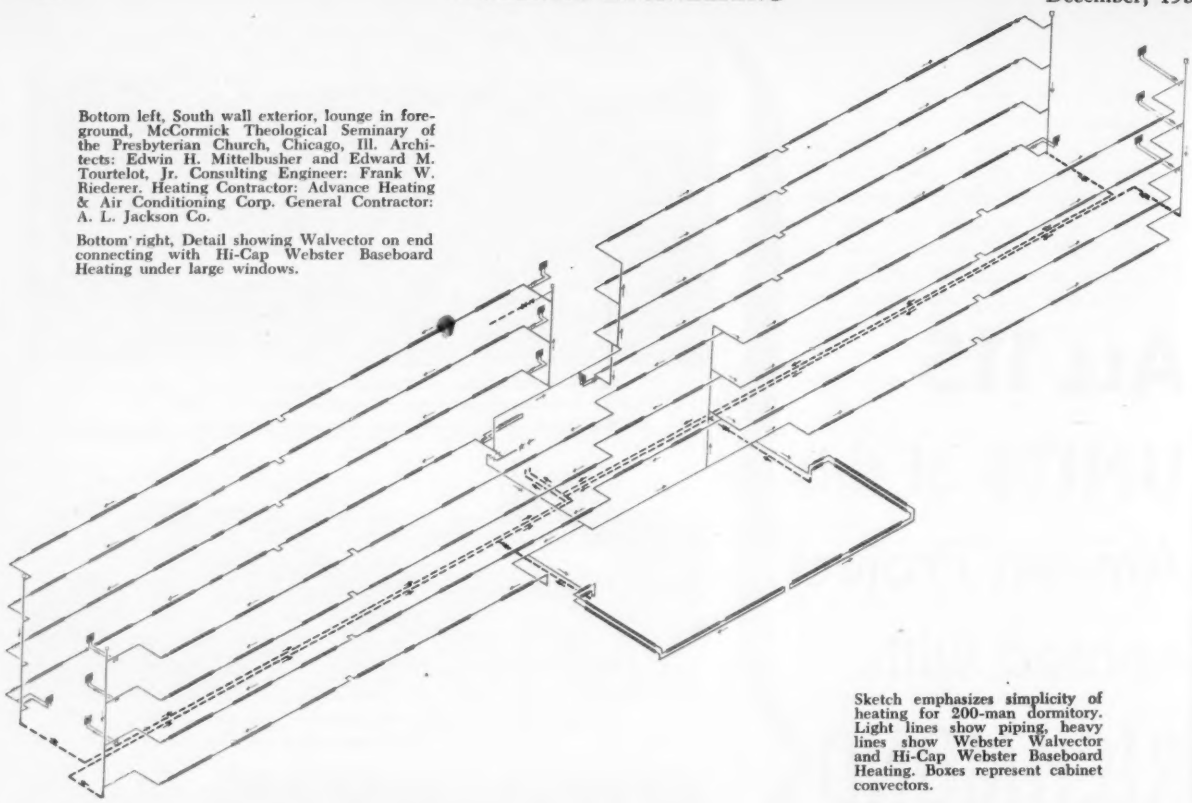
RICHMOND RR PLUMBING & HEATING

RICHMOND

Richmond Radiator Company DE-12
19 East 47th Street, New York 17, New York
Please send me information on Richmond gas-fired winter air-conditioner:
☐ We are Plumbing Wholesalers
☐ Plumbing Contractors ☐ Building Contractors
NAME.....
COMPANY.....
ADDRESS.....
CITY.....ZONE.....STATE.....

Bottom left, South wall exterior, lounge in foreground, McCormick Theological Seminary of the Presbyterian Church, Chicago, Ill. Architects: Edwin H. Mittelbusher and Edward M. Tourtelot, Jr. Consulting Engineer: Frank W. Riederer. Heating Contractor: Advance Heating & Air Conditioning Corp. General Contractor: A. L. Jackson Co.

Bottom right, Detail showing Walvector on end connecting with Hi-Cap Webster Baseboard Heating under large windows.



Sketch emphasizes simplicity of heating for 200-man dormitory. Light lines show piping, heavy lines show Webster Walvector and Hi-Cap Webster Baseboard Heating. Boxes represent cabinet convectors.

Perimeter Heating for a Dormitory

True perimeter forced hot water Webster Heating was provided for the new dormitory building at McCormick Theological Seminary.

Continuous Heating Elements connected in series blanket the windows . . . spread the heat uniformly on every floor.

Consulting Engineer Frank W. Riederer says:

"The continuous radiation design contributed to economy of first cost. It eliminates exposed piping, leaves more usable room space, produces uniform heating.

"Steam from the Seminary's central heating plant is converted to hot water in a heat exchanger. In this design, the hot water system proved less expensive and more satisfactory than a system using steam."

Call the Authorized Webster Factory Representative or write us for his name.

Address Dept. DE-12

WARREN WEBSTER & COMPANY

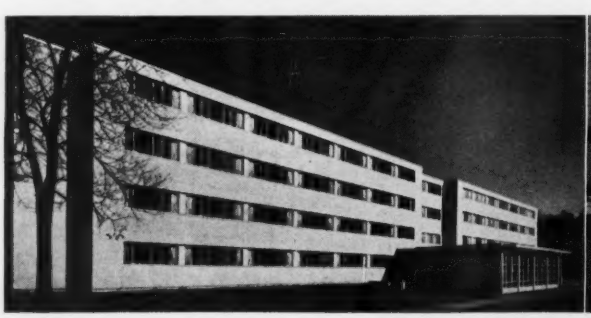
Camden 5, N.J. Representatives in Principal U.S. Cities

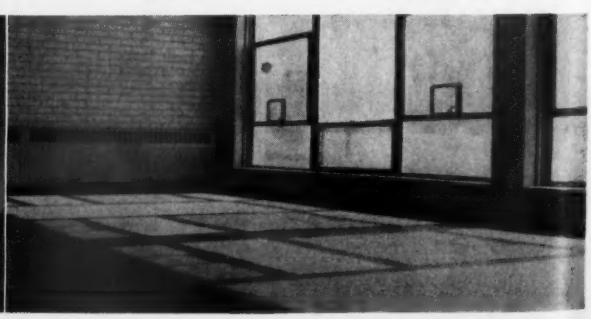
In Canada, Darling Brothers, Limited, Montreal

Webster WALVECTOR

REG. U. S. PAT. OFF.

For Steam or Hot Water Heating





Our Industry

December • 1951

AS THE EDITOR SEES IT!

Get All That's Coming to You...

Bad Debts Are Increasing:

DESPITE the fact that money is plentiful, collection experts say that payments on accounts receivable are slowing up and that bad debts are increasing. Hence, the plumbing and heating contractor-dealer should take steps now to adopt adequate precautionary measures, just in case the trend continues to grow.

This situation, probably, is due to higher living costs in cases where income is not keeping pace with rising prices, or to the high tax rate—which takes a substantial part of the wage-earner's pay check, making it necessary for him to pass up due dates or not pay at all.

How the Profits Disappear:

From the field experience of one accounting expert, it was observed that few contractors are taking adequate means to collect their outstanding accounts. In one case reviewed, past due accounts had jumped 30 percent in a six month period. Many members of this industry, the accounting expert said, fail to realize how fast the profit in a charge account is eaten up by lax collection practices. He cited the case of more than one contractor who was forced to borrow money to pay his own bills because his credit customers did not pay him.

Even if the contractor does not have to borrow because receivables are delinquent, he loses the use of the money during the period of delinquency. Quite a number of contractors have reported that they have stopped discounting their own bills because they can't get their money in on time. This costs them a pretty penny and cuts deeply into their profit on credit sales.

Get Your Money in Now:

There are other reasons, too, why the contractor should use every means consistent with good business practice to get his money in as fast as possible. Among them: (1) In an inflationary period when the dollar goes down in value, the longer the contractor waits for his money, the less it is worth; (2) if unemployment appears, as some economists think that it might as production for civilian use outruns purchasing power, buyers' resistance may stiffen. Competition will gather momentum, and to get business, contractors may be induced to extend credit more freely. If so, credit losses will increase proportionately.

Here's One Solution:

In the face of these possibilities, the contractor should play safe and collect his receivables promptly, and not be lulled into thinking that because there is an abundance of money in circulation today, he has nothing to worry about if his credit customers take their time settling up with him. The article beginning on page 92, of this issue, discusses ways and means for increasing the ratio of cash to credit sales, and how the contractor can get all that's coming to him on the credit business that he finds it necessary to extend.

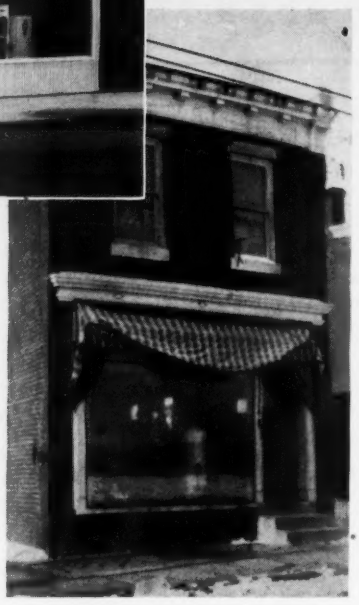
Let Machines Do the Job...

A BIG QUESTION faced by many contractors today is not whether they can afford to buy improvements for their business, but whether they can afford *not* to buy them.

Taking machines as an example (materials handling, fabrication, installation), we think the question can best be answered by the application of a simple formula: Take the job (or jobs) that must be done; multiply by the man-hours per year spent on each job, times the cost per man-hour. This should equal the total cost of a given job for one year, when done manually.

(Please turn to center of page 185)

"Ring out the old (below) and ring in the new (left)," says J. J. Adams of Philadelphia, "to help keep the cash registers ringing." New store increased business 300%.



Now that you have a new store—or are planning to build one . . .

Here's How to Keep It Selling . . .

by JOHN ADAMS

No white elephants wanted, was the theme John J. Adams, of Philadelphia, had in mind when he opened his new store in November of 1950. Careful planning marked each step of his showroom design and layout, and the same type of planning is now evident in his merchandising techniques—all of which add up to a "store that keeps on selling!"

Evidence of this sellability is found in the fact that in one year's time, the Adams store has had four complete stock turnovers. Or, looking at it another way, *Adams has increased his retail business 300 percent over what was done in the old store.*

To find the secret of Mr. Adams' success, let's examine some of his techniques.

Primary in his entire merchandising operation is change of pace. Subtle merchandising touches, such as the use of soft fluorescent lighting and ceiling spotlights, are coupled with hard-hitting promotional campaigns that do everything but reach out and grab the customer off the street by the scruff of his neck.

Typical of these promotions are special window displays that emphasize the need for good plumbing, heating and appliances. For example, a recent display advised customers to get their heating plants in shape for the coming winter weather. This resulted in 23 direct inquiries.

Since the showroom is located on a corner (also a bus stop), his two-view window displays carry extra emphasis. (See illustration, above.) Many of the people waiting for a bus go into the showroom to see more closely an item that has caught their fancy, and still many more return to do their shopping on one of the three nights a week that the Adams store is open.

"Proper display of merchandise is very important to my selling," says Mr. Adams. Firmly believing in this practice, he changes his displays and the arrangement of his store interior about six times a year.

"We're amazed," he says, "at how the arrangement of a display can make a sale. A few customers have looked at a display and were not quite satisfied. Yet, two months later when the arrangement of the display was changed and a few minor changes had been made, they were among the first to buy."

Operating displays are another merchandising technique that carries the full support of Mr. Adams. He learned their *true* value almost by accident.

For comfort in cold weather, he utilized zoned baseboard heating in the showroom and shop areas. Then, he was surprised at the number of curious customers who wanted to know more about "the heat that's coming from somewhere around my ankles."

Naturally, Mr. Adams took these customers into his own boiler room

(Please turn to center of page 86)

SIXTY WAYS TO KEEP YOUR STORE SELLING

Match your methods against those used by the leaders

If you already have a store:

☐ Do you support it with advertising? A recent survey showed that domestic engineering dealers who do use advertising as part of their store sales program enjoy a volume approximately 40 percent above dealers who do not.

☐ Do you employ outside salesmen to round up prospects for a store demonstration? If not, you may find some worthwhile ideas in the series "How A Salesman Is Made" on page 104, this issue. It is significant to note that one contractor, quoted on page 86 of the November issue, estimated that 60 percent of his $400,000 a year volume is attributable to outside salesmen.

☐ Do you look at your letterhead now and then? Everybody else does! Everytime a letter leaves your office, it speaks for your business . . . and it should speak well. From your letterhead, your customers or prospective customers make many inferences, including your standards of quality and the general character of your organization. (See page 88, this issue.)

☐ Do you price tag all merchandise? Tags will very often take the ice out of price. A good tag tells unit cost, installation cost, total cost, down payment and terms.

☐ Do you display more than one model of a given appliance or fixture? Contractor Frank

(Checklist continued on center of page 86)

If you are planning to build one:

(See checklist number two, next month)

"Use boiler to heat; sell . . ."

"Our boiler can do more than one thing at a time. As it heats, it sells. We take our customers to our own boiler room," says Adams, "and let them see how our baseboard heating system works. A live demonstration helps any sales pitch sell."

"Show them how it works . . ."

"Curiosity might have killed the cat, but it certainly never killed a sale! We see to it that the customer's curiosity is aroused by the heat that comes from someplace around the ankles, and then we sell him as we answer his questions."

"Use Showmanship"

"A bored customer never buys, and we keep him interested by dramatizing his needs," is how John Adams describes the use of this display of miniature toilet seats.

"Low income appeal"

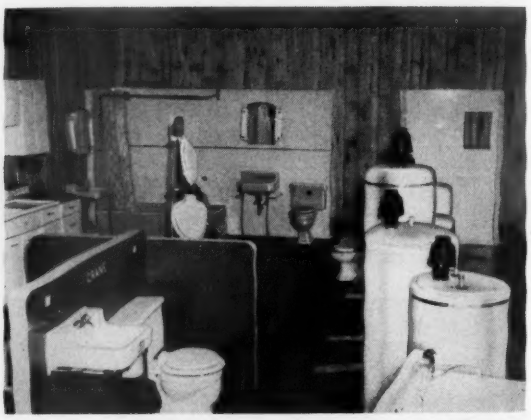
"Don't forget the limited income customer, and he won't forget you. We show him how he can convert his old tub into a shower, if he can't afford a new built-in tub."

"Put 'em side-by-side"

"The power of suggestion pulls in many a related sale," says Adams. "For example, we display wash tubs side by side with our line of automatic water heaters."

"Show them how it'll look . . ."

"Your customer's eyes will help you sell if you give her an opportunity to use them. Complete displays make it easy for *the customer to imagine how a complete bathroom or kitchen* will look in her own home, and this is half the battle."



"They'll like beauty too . . ."

"The more beautiful the display, the better it sells we have found. *Often our customers are attracted by the execution of a display before they actually become interested in the product. Harmonizing colors are very important."*

(Continued from page 84)

to fully explain the heating system. *(See illustration, page 85.)* This practice became so successful—in *sales—that Mr. Adams has made* his boiler room into a "showroom annex", for demonstration purposes.

Summing up his own activities, Mr. Adams says, "There's no need for a *contractor-dealer to ever* have to have a 'white elephant showroom.' My experiences have *proved to me that it only takes a* little planning and foresight to become a good merchandiser."

(A listing of John Adams' merchandising techniques begins on

Rate Your Methods . . .

(Continued from preceding page)

Brodie, of San Francisco, sold 17 *percent more automatic washing* machines than any other store in *town, partly by showing seven na*tionally famous brands in one display (see facing page).

☐ Do you keep abreast of the merchandising activities of other dealers in your community? *By studying the sales promotions of* other local dealers, you can chart your own merchandising progress and at the same time pick up new promotional ideas that can be applied to your activities in another *form.*

☐ *Do you or your salesmen try* to sell related items whenever a customer buys an appliance or fixture? John Adams (see photograph, above) not only suggests related items in his sales pitch, but also displays related items together so *that his salesmen have an easier job* of turning a single sale into a multiple sale. *For example:* Water heaters next to laundry machines, water softeners next to dishwashers, etc.

☐ Do you use operating displays so that customers can see fix-

tures and appliances in action? One contractor, Tom Wilderspin of Eatontown, N. J., attributes six percent of his total sales to an operating display of radiant heating. (See page 102, August issue.) Other operating displays: Dishwashers, automatic washing machines, baseboard heating, boilers, disposers, etc.

☐ Do you use an outside sign to help you sell? Roy S. Greelish, Jacksonville, Fla., and Charles Jacot, Los Angeles, have found that their large neon signs (showing dripping faucets) do a selling job 24 hours a day.

☐ Do you encouragee employees to take added care in personal appearance, and to smile?

☐ Do you offer cash for trade-ins? The lure of an extra five or ten dollars for an old appliance or water heater often makes the difference between a sale and a "no sale."

☐ Do you put motion in your displays to help attract attention? George Groote, of Chicago, uses a revolving display for dishwashers and has tripled his sales volume. (See story in February 1951 issue, page 106.)

☐ Do you display at home shows, county fairs, etc. to get prospect lists for the entire year? (See August issue, page 106.)

☐ Do you concentrate on quality merchandise and avoid buying inferior goods merely because they are available and their price is low?

☐ Do you greet customers immediately when they enter the store, even if you must keep them waiting before serving?

☐ Do you greet as many customers as possible by name?

☐ Do you take the greatest care to assure utmost courtesy in handling all customers? Does the staff avoid giving a flat "no" to a request for merchandise that is not in stock?

☐ Do you take advantage of local and national holidays to hold special events sales? Christmas is not the only time that the

(Please turn to top of page 110)

HOW THE LEADERS SELL...

Washing Machines

WHAT does it take to sell more automatic washing machines than any other store in town?

According to San Francisco contractor Frank Brodie, who recently sold 17 percent more automatic washers than his nearest rival (including Macy's department store) in a three-month, city-wide sales contest sponsored by a prominent washing machine manufacturer, it takes a combination of store display, advertising and showmanship.

"Instead of a single-brand display," says Brodie, "I show no less than eight nationally famous brand name automatic washers in my store. (See illustration below.) Each is hooked up, ready for use and comparison . . . and the salesmen do their own laundry in every sales presentation to insure that the customer sees each machine at its best."

Each of his eight automatic washing machines is hooked up to a battery of automatic water heaters and water softeners, which provides customers with a practical demonstration of these products too.

To supplement his showroom display, Brodie uses a 12-page advertising newspaper, "Appliance News," that is sent to thousands of customers each month. Prime points of his advertising are quick installation, a wide selection of brand names to choose from and guaranteed service.

According to Brodie, it's necessary to show what merchandise will do in order to sell it—therefore, he shows it 'by the dozen.'

A forthcoming issue of DOMESTIC ENGINEERING will illustrate and describe the unusual "Appliance News" which is distributed to thousands of Brodie customers each month.

Eight national brands of automatic washing machines, each hooked up for actual operation in his store, are credited by Frank Brodie for the success of a recent promotion.

LOOK at Your Letterhead

Everybody Else Does!

• **Part Two of a Series** •

IN THIS second article of a series, three examples from DOMESTIC ENGINEERING'S gallery of famous letterheads illustrate (1) letterheads designed by contractors themselves and, (2) letterheads designed with a specific purpose in mind.

In other words, different types of business operations require different letterheads. A contractor whose operation consists largely of big jobs may have a letterhead that fits his needs perfectly. A similar design might not do at all for the merchandising dealer.

This point is readily understood when we review the facts: Every time a letter leaves your office, it speaks for your business—it gives the recipient a mental picture of your business; it serves your firm in the capacity of an advertisement. The three basic elements of good letterhead design, adequate information, simple organization and effective dramatization can be combined to achieve the desired result (see examples on these pages).

Design No. 1:

Merchandising Operation . . .

IT IS APPARENT AT A GLANCE that Goodwin does an over-the-counter business, indicated by the photo of his modern and attractive store which is prominently placed in the upper left hand corner. The slogan at the top adds an unobstrusive, yet important, element which merchandises the company's service. All elements are neatly tied together by the judicious use of a rule and the word "Licensed" in color. The company's telephone number is also given prominence by the use of color.

Contractor's Comment: "The use of this modern letterhead adds a note of distinction to my business. It inspires customer confidence and does an excellent job of advertising and prestige building."

Design No. 2:

Combination Business . . .

THE FACT THAT O. C. MCDONALD does a combination merchandising and contracting business is shown by the line of copy to the right of his name, which is prominently reversed out of a bold green background. As shown by the line of copy at right, the company handles sheet metal fabrication, erection, heating, plumbing and air conditioning contracts, and also merchandises appliances. The other elements are laid out in accordance with good letterhead design practice, allowing the eye to take in at a glance the name, type of business, address and phone.

Contractor's Comment: "A letterhead is an advertisement and should, therefore, do a selling job. We feel that ours effectively calls attention to the firm name and conveys the idea of our versatile plumbing, heating and appliance operation to customers."

Design No. 3:

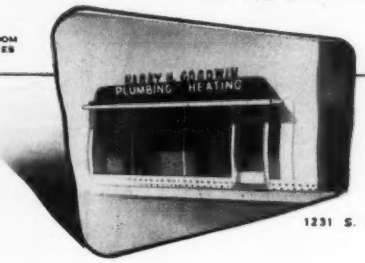
Big Contracting Firm . . .

SEVENTY PERCENT OF THE half-million-dollar annual volume of The Knab Company is composed of large industrial and commercial contracts. Therefore, they wanted a letterhead that conveyed the idea of "bigness" and dependability. This has been accomplished by means of the large panel with the name prominently reversed out, and by the line of copy reading, "Heating, Plumbing and Engineering Contractors." Dependability is stressed at the bottom with the words "Over 30 Years of Service." Included with the drawing of a commercial and industrial building is a home, which indicates that Knab handles residential jobs too.

Contractor's Comment: "If a business today doesn't have a modern letterhead, it's not a modern business. A letterhead should be designed with a definite purpose. In ours, for example, we tried to 'get across' the idea of a dependable, old line company capable of handling the biggest jobs as well as smaller, residential work. We feel that our letterhead has accomplished this purpose."

WHEN YOU WANT A GOOD PLUMBER "CALL A GOODWIN"

DISPLAY ROOM AND OFFICES



HARRY H. GOODWIN

Licensed MASTER PLUMBER AND HEATING CONTRACTOR

TELEPHONE 2-5521

1231 S. McDUFF AVENUE JACKSONVILLE 5, FLORIDA

O. C. McDONALD CO.

Contractors — SHEET METAL FABRICATION AND ERECTION

HEATING APPLIANCES PLUMBING AIR CONDITIONING

367 E. SANTA CLARA ST. - SAN JOSE 20, CALIFORNIA - PHONE BALLARD 8403

the [redacted] *company*

HEATING, PLUMBING AND ENGINEERING CONTRACTORS

3723 NORTH OAKLAND AVENUE MILWAUKEE 11, WISCONSIN EDGEWOOD 2-6560

Atomic Plumbing Is Here!

You'll be using atoms in the performance of your plumbing work soon, if the experiences of these Michigan contractors is any indication

The atomic age has just begun, and already two domestic engineering dealers are using atoms to solve their customers' plumbing problems. Contractors Bruce Wigle and George H. Chafy, both of Detroit, have turned to the radio-active isotope to solve the problem of finding a leak "buried somewhere in the floor."

Use of the isotopes was given prominent mention recently, when a half-page article in the Detroit Daily News carried the headline, "Plumbers Put Atomic Energy to Work to Locate Leaks."

Before contractors Wigle and Chafy used isotopes, a leak in the floor meant an expensive session of floor ripping, which involved examining every inch of pipe and testing every connection. With the isotopes, however, the leak can be found through the use of sensitive instruments and pinpointed to a six to 12 inch area.

Briefly, this method involves the following: The main water line is disconnected, and radioactive iodine is added to the system. Then, water forces the isotopes to travel throughout the system. The travel of the isotopes is followed with the aid of the sensitive instruments, and as soon as the isotope disappears into the ground . . . the leak is found.

The handling of the radioactive material was under the supervision of Radioactive Products, Inc., who were granted special permission by the Atomic Energy Commission (full details are presented at right and below).

THE DETROIT NEWS, FRID

Plumbers

ATOMIC plumbing is here.

"Cutie Pies," Samson meters, Geiger counters and radioactive isotopes will soon be found in the well-equipped plumber's satchel.

Within the past week, plumbing leaks in two suburban ranch-type homes were detected by the application of atomic physics using isotopes through the permission of the Atomic Energy Commission (AEC).

* * *

PLUMBER'S IDEA

G. H. CHAFY, owner of a plumbing and heating business in Walled Lake, was called to a Bloomfield Hills home to fix what had been determined to be a sizeable leak in the water system.

Using ordinary methods, Chafy was confronted with having to rip up the floor of the new home every few feet until the leak was found. Needless to say, this would have been costly as well as very inconvenient to the homeowner.

It was then that he began to think of using radioactive material that could be traced through the water lines with special delicate instruments to the point of leakage thereby greatly lessening work, expense and trouble for the owner.

* * *

GETS AEC PERMISSION

AFTER MAKING inquiries through educational institutions and plumbing supply houses, Chafy succeeded in contacting Homer S. Myers, president of Radioactive Products, Inc., Detroit, who with his associates later conducted the plumbing tests.

As in each individual case of the use of radioactive material, Myers received explicit permission from the AEC to use a radioactive isotope for the job.

Before granting approval for the use of the isotopes, the AEC must be assured that the radioactive material will in no way contaminate the water supply or sewage and that those people handling the "hot" material are thoroughly qualified to do so.

* * *

USE RADIOACTIVE IODINE

RADIOACTIVE iodine was chosen for the job because its atomic half-life is very short and because the element itself decomposes rather rapidly.

After the test was performed successfully in Bloomfield Hills, the Bruce Wigle Plumbing & Heating Co. of Detroit engaged the Radioactive Prod-

ASSE OFFICIAL SAYS ATOMIC PLUMBING IS SAFE . . .

L. Glen Shields, president of the American Society of Sanitary Engineering, told DOMESTIC ENGINEERING last month that the radioactive isotope method of leak detection is harmless to the purity of a municipal water supply if correctly used and the pipes properly flushed (see article).

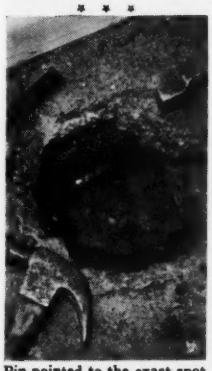
Mr. Shields is also chief plumbing inspector of Detroit.

How torn up floors can be

PLUMBING PROBLEM: For two years a plumbing leak had been suspected to exist in the hot water line of a very large ranch-type home. A water bill of $60 had regularly been paid and the heating bill had reached as high as $400 per month. Five or six different openings had been cut through the side of the house in an attempt to locate the point of leakage. None were successful. Radiant heating pipes were buried in the floor.

TREATMENT: Contractor George Chafy called application engineers of Radioactive Products, Inc. who introduced 2 millicuries of radioactive Iodine into the hot water line, which had been disconnected from the remainder of the system. A hand pump was connected to the line and water was forced in behind the slug of radioactive material. Inasmuch as the plumbing layout was unknown, it was necessary to trace this by following the radioactivity as it proceeded under the house. The material was

Put Atomic Energy to Work to Locate Leaks



Pin-pointed to the exact spot by the radioactive sensitive meters, the leak is found under the floor.

The picture at the left shows how the radioactive iodine used for detecting the leak is taken from a special can.

Above, Homer S. Meyers of Radioactive Products pours a "slug" into the water system. Only qualified personnel can make the tests.

At the right, a technician takes a Samson meter reading of the radioactivity in the water pipe under the floor.

— Photos by Charles T. Martin, News Staff

Using a "Cutie Pie" radiation counter, Carl Alsterberg, of Radioactive Products, tests the water outside the house to see if it contains radioactivity coming from the leak.

ucts concern to aid them in a similar plumbing difficulty they were called upon to correct in a Huntington Woods home. This test was also concluded successfully.

Essentially, the method of making the test for plumbing leaks was the same in both cases.

* * *

HOW IT WAS DONE

WATER WAS pumped into the sealed off water system and then the "slug" or isotope was poured into the main. A pump was then hooked up to the system and more water was pumped in under pressure thereby pushing the "slug" through the pipe until it came to the leak. Where it stopped.

By following the water pipes, which are underneath the floor, with a delicate Samson meter, the exact place of the leak may be readily found.

Only a very small part of each house was disrupted by the actual repair work.

PIPES ARE FLUSHED

AFTER THE TEST had been completed and the leak located, the pipes were drained and flushed with pure iodine which diluted the isotope greatly and weakened its radiological power.

More pure water was then introduced into the mains which were flushed out until no trace of the isotope could be detected by the special instruments. Extreme care and caution were exercised by the personnel of Radioactive Products during the testing.

The instruments used in tracking the iodine isotope were in part developed by Radioactive Products, Inc. The Samson meter is a very sensitive apparatus that averages the total number of radiations given off by active substances per minute.

* * *

FIRST APPLICATION

THE "CUTIE PIE," which is pictured, was developed at Oak Ridge during the war when devices were needed to measure the amount of radiation workers at the project were exposed to. It measures radiation in terms of Roentgens, a unit of measurement for radioactive materials.

This application of atomic physics to domestic plumbing is believed to be the first of its kind in the country.

J. E. C.

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avoided by the use of atoms for pipe leak detection . . .

traced through a large bedroom, past the various side connections of a large bathroom, and through a second bedroom. Its progress finally stopped at the point of a tee connection beneath the tile floor of a shower room. These results indicated the leak to be at that point. The lines were flushed and drained to remove all of the radioactive materials.

RESULTS: On the basis of the above indications, journeymen broke through the footing of the house and found a damaged fitting in the suspected arm of the tee connection. Repair was accomplished without any disturbance to the interior of the home.

PLUMBING PROBLEM: A new ranch-type home was known to have a substantial leak in the plumbing beneath its cement floor. Evidence of moisture was observed in the vicinity of the adjoining bath and kitchen. Radiant heating pipes were buried in the floor.

TREATMENT: After the main water line was disconnected, Contractor Bruce Wigle called application engineers of Radioactive Products, Inc. who introduced 2 millicuries of radioactive Iodine into the system. Water was gradually poured in on top of this so that the material would be forced into the plumbing system beneath the house. Delicate survey meters were positioned over the main branches of the plumbing, and the point of leak was indicated by the direction of flow and final point of loss of the material from the line into the ground. Results indicated this leak to be located at a tee leading from the main line to the bathroom commode. Non-radioactive Iodine was then added to the line to dilute and render harmless the radioactive material. More water was flushed through the line.

RESULT: The floor was opened at the point of leakage indicated above, with a hole of approximately 6 inches in diameter.

MANAGEMENT METHODS (one of a series)

Don't Let THIS Happen

When analyzing small business failures, it is easy to see why some contractors who are lax in handling receivables go into the hands of a receiver. But it can be avoided. Here's how

• See Editorial - Page 83 •

CREDITMEN agree that many businessmen who fail do *not* fail because their accounts are uncollectable. They fail because they can't collect their money when they need it or they tie up too much of their working capital in receivables, which they cannot liquidate, and this prevents them from paying their own bills, and so, the creditors crack down. But after the crack-down, the receiver often collects all or most of the money due. This shows how important it is to collect receivables on time.

Pass Up This Business

One reason why contractors cannot collect their bills on time is that they often give credit to customers who are good for the money, but who take their own time in paying. It is sometimes better to pass up such business. However, in many cases, the contractor himself is at fault because he lets his customers pay as they please.

First Step in Collecting

The first step in effective collection is to make sure that customers understand when the accounts are opened that terms are so-and-so, and that payment is expected on the due dates.

Another reason why contractors miss fire on collections is that they grant too much credit for their financial capacity. They give credit to good accounts and get their money promptly, but they sell *too much* on credit. This produces a condition that most businessmen overlook and may put the seller in as bad a spot as his counterpart who goes broke because he has so many past dues on his books.

It Ties Up Cash

If a contractor has $2,000 on his books and his business is geared to this much credit every month, he really freezes this money in a permanent investment much like a fixed asset, such as a pipe threading machine or business property. His customers pay promptly, but to keep business moving at a profitable volume he must replace every $2,000 paid up by credit customers with another $2,000 of new credit business. This is okay as long as the contractor can stand it financially, but if he builds credit volume to, say $4,000, he may find himself tied up for cash as much as the fellow who is overloaded with past due accounts or slow-moving stock.

Where's the Danger Point?

The danger line depends upon the business and its management. The best way for the contractor to tell when he hits the line is when he begins to backslide on payments of his own bills. When this happens, he had better increase his ratio of cash

to You . . .

to credit sales. Even if customers are good risks, it may be hazardous to take too much of their credit business.

One way to decrease the ratio of cash to credit sales is to insist upon cash for small orders, say under $5 or $10. Small bills are headaches to all businessmen. Some customers take their time about paying small bills, just because the amounts involved are small. They think that the few dollars they take their time about paying inconveniences no one, or they feel that the seller won't press unduly because it doesn't pay to enforce collection. This is true.

Time and Cost Factors

It doesn't pay to spend much time collecting small bills and court action is too expensive unless there is a Small Claims Court in the state. Even then, the fees and time spent may not justify legal action.

For this reason, contractors write off thousands of dollars yearly in small bills because it isn't worth while trying to collect them when the debtors hedge on payment. One contractor who averaged a net profit of 6.1 percent on sales wrote off $1,100 in small accounts in 1950, the accumulation of a four year

(Please turn to top of next page)

ONE WAY TO GO BROKE IN BUSINESS!

When analyzing credits and collections, as shown in the article at left, it is easy to see why contractors who are lax in handling their receivables sometimes go into the hands of a receiver.

Let's examine a typical case and see what happens to the supposed profit from credit sales totaling $2000 which are past due. We'll say the plumbing and heating contractor's name is Miller. Miller's terms are 30 days and on August 31, 1951 he had $2000 in past due receivables. They classified as follows:

30 days	*60 days*	*90 days*	*Total*
$800	$500	$700	$2000

Figuring interest at 5 percent, the 30-day accounts ($800) cost him $3.50 for August; the 60-day accounts ($500) cost him $4.16 for July and August, and the 90-day accounts ($700) cost him $8.75 interest for June, July and August. All told, the interest adds up to $16.41. His bookkeeping work and collection expense on these accounts approximated one percent of their sales figure, or $20. Because he could not get in his money on time, he had to forego the discounting of more than $2000 of his own bills payable in June, July and August, and so, he lost $40 on discounts. Up to August 31, 1951, his past due accounts had cost him:

Interest on the money invested	$16.41
Expense of handling accounts	20.00
Lost discounts	40.00
Total	$76.41

Miller's figures up to August, 1951 showed that he had been realizing 5 percent net on sales, and so, he figured he'd earned $100 on the $2000 past due accounts. But, deducting the $76.41 from his supposed profit leaves only $23.59 net profit on this business or 1.2 profit on $2000 sales—and the money is still outstanding. This means that he will have to pay out still more before he gets it all in. He might even end up with a few bad debts to boot.

In the final analysis, Miller is likely to lose more than he made.

Don't Let THIS Happen to You! (... Continued)

period. On the basis of a 6.1 percent net, he would have to sell more than $17,000 in merchandise or service to make up for this loss.

How Tax Credits Are Lost

Moreover, he lost a tax benefit for all accounts ascertained worthless prior to 1950 because the tax office does not permit deductions for bad debts materializing prior to the current taxable year. This contractor paid through the nose for his lax credit and collection policy.

Contractors often talk about their collection policy, but they sometimes overlook the fact that a collection policy is a passive thing that must be activated by efficient collection practices.

Investigate Applicants

Efficient collection practices consist: (1) Of investigating new credit applicants carefully, giving credit only to those who are gilt-edged risks; (2) stating terms when the sale is made and making it clear that payment is expected before or on the due date; (3) limiting the total credit extended to financial capacity; (4) installing an efficient collection system and operating it systematically; (5) sending out statements the first of each month and not any old time during the month as too many do, and (6) analyzing receivables monthly and classifying them as to past-due dates, following up all those that are past due with letters or phone calls and getting a commitment from them as to when they will pay if they can't settle at once.

Next to getting the money, the important thing is to get a definite promise from the debtor when he will pay. Creditmen say that in 60 percent of the cases they pay, whereas, if the contractor lets them put him off with an indefinite promise, less than 20 percent settle in a reasonable time.

There is an economic reason why the contractor should collect promptly. In an inflationary period when the dollar goes down in value, the longer he waits for his money, the less it is worth. If he permits a sizable volume in past due accounts to grow whiskers on his books, the dollars he eventually receives are worth less than they were when the credit sales were made and he can buy less with them. So, he should get his money in as fast as possible.

A Look at the Future

On the other hand, some economists are saying that production for civilian use has outrun purchasing power. At the end of June 1951 inventories were 70 billions, a record figure that represents 25 percent of America's current national income. They say that there may be a correction and that this can come about in two ways, by a decline in prices or by a decline in production for civilian use. Economists further point out that the rate of accumulation of liquid savings has fallen almost to nothing, that personal income, after taxes, is too small to support the present volume of retail trade, that already there are signs that the inflationary bulge from the stepped-up defense program will be less than expected.

It's More Important Now

So if prices decline, or unemployment appears, buyers' resistance, already quite marked, may stiffen even more, competition will gather momentum, and to get business, contractors may be induced to extend credit more freely and collection losses will increase. That such a condition can occur today with the heavy defense expenditures authorized may seem hard to believe, but many of the nation's leading economists have been harping on this possibility for a long time.

4 Ways to Get All That's Coming to You

Previous articles in DOMESTIC ENGINEERING have presented detailed information about the writing of collection letters (see June 1950, page 108; August 1951, page 105).

The methods used are varied as the stars and are reviewed briefly below.

1—The contractor should keep his letters courteous even when threatening to sue, because a bad credit customer may become a good cash customer later on if he is not antagonized.

2—If the contractor does threaten to sue, he should go through with it, otherwise all subsequent duns will fall flat.

3—Trick letters, such as enclosing a pin for the debtor to pin his remittance to "this letter and return in the next mail", aren't of much use. They are all right for high pressure collections by a collection agency or consumers sold on a national basis, but not for the contractor-dealer who knows his customers pretty well.

4—Letters should be spaced about 10 days apart and a good collection system installed to assure prompt follow-up. Some contractors, unfortunately, send out statements and collection letters whenever the spirit moves them, which, too often, is not too often.

Hence, the contractor should play safe and collect his receivables promptly today and not be lulled into thinking that because there is an abundance of money in circulation, he has nothing to worry about if his credit customers take their time settling up with him.

These Contractors Solved the Collection Problem

The St. Joseph Master Plumbers' Assn., St. Joseph, Mo., has solved the problem of collecting over-due bills without tying up long hours of individual contractors in the process, by setting up the group's own credit collection agency.

The plan was developed in 1949 and has been functioning successfully ever since, according to Harry Raines, head of the committee. Because of prevailing economic conditions, plumbing and heating contractors in the area decided to organize their credits in such a way as to lump all of the "headaches" and nuisance of bill collection into a single agency.

"It is a well-known fact that many homeowners nowadays are likely to be piled up with property and chattel mortgages," Mr. Raines pointed out. "Making these payments, plus paying higher taxes, has strongly affected promptness in paying other bills. Therefore, what we have done for our association members is to accomplish the following points:

How the St. Joseph Plan Works

"1—We put effective credit and collection service to immediate use. 2—We have eliminated much of the 'guesswork' out of granting credit, as each member checks with our committee before taking on a project. 3—We assume the responsibility of refusing or extending credit. 4—We receive advice and counsel which helps every member. 5—

(Please turn to top of page 185)

Practical Experience Is My Teacher!

A Short Course in Radiant Panel Heating, by Otto Vogt, Chicago Contractor

WITHIN A FEW YEARS, heating contractors who don't install radiant panel heating jobs will be as scarce as hen's teeth. Public acceptance of this "glamour" method of heating is growing fast, and the day is soon coming when nearly all contractors will install at least some jobs.

If properly installed, radiant panel heating will turn the average customer into a life-long friend. And we have learned from years of practical experience that it takes friends to build a business. Nearly 75 percent of our business is brought in by the good friends we have made with radiant panel installations. And we are still building, our

(Please turn to top of page 177)

Editor's Note: *Trends indicate that radiant panel heating is growing in popularity. However, recent surveys show that many contractors are not getting their share of this rapidly expanding business.*

Therefore, Domestic Engineering is initiating a new series on panel heating. These articles are intended for the contractor experienced in this form of heating as well as for the novice in the field. Based on the practical field experience of the country's leading radiant panel heating contractors and engineers, subsequent articles will tell the factual on-the-job story of how to make successful radiant panel installations, bringing into play the many new facts discovered during the past year.

Sales Techniques . . . for Water Heaters

Here are three rungs from the success ladders of three of the nation's leading domestic engineering dealers. Their sales techniques sold over 2100 water heaters last year

Trade-In Offer:

"TEN DOLLARS CASH for your old water heater"—that's the appeal Lawrence A. Weider & Sons, Inc., of Rochester, N. Y., used to start a recent campaign that resulted in the sale of 327 water heaters.

Pointing out in a window display that no one should be a "water heater waiter," the company made good use of three different brands, a cut-away drawing and an old unit to show the desirability of owning an automatic water heaters, (see photo).

By showing both the old and the new, the display dramatized the necessity for modern heater units.

According to Weider, "Offering a trade-in allowance makes the customer feel he is getting something extra. This 'extra' makes the difference in a lot of our sales . . . and the volume of our sales makes the cost of the trade-in allowance a negligible factor."

Old heaters are sold for scrap.

Travelling Billboard:

No MATTER WHERE you go in Washington, D. C., the chances are you'll see one of the traveling billboards of John G. Webster & Son.

Knowing that his trucks are seen constantly by prospective customers, Webster had painted on each one the slogan, "We Keep You In Hot Water." The result of this slogan painting has shown itself in additional sales.

Another factor that has aided sales due to his traveling billboards is the fact that the customer can directly associate the slogan with the company name.

Thus, as Webster says, "Wherever my trucks go . . . so goes my sales message."

Full-Line Display:

VARIETY, it has often been said, puts spice into life. But for Jimmie West, Los Angeles contractor-dealer, variety puts "life" into his sales.

Displayed in the West showroom are 62 different sizes and makes of water heaters—including cut-away models, (see photo). According to West, this complete display is responsible for over 50 percent of his water heater sales . . . and he averages almost 700 sales a year.

West started this type of display back in 1931 and, so far, this technique has never failed to impress customers with the fact that no matter what their requirements are, West has a water heater to fill the bill. Beyond this, it gives West the opportunity of appearing impartial in his recommendations.

"At least," says Jimmie West, "our cutomers know more about water heaters than ever before after seeing our display. This results in more knowledge for them and more sales for us."

APPLIANCES
ARE YOU A
HEATER WAITER
WELL, TURN ABOUT IS FAIR PLAY
AUTOMATIC WATER HEATER
WELL GIVE $10.
TANKHEATER
AUTOMATIC HEATER
The Rheem AUTOMATIC GAS WATER HEATER
The General AUTOMATIC GAS WATER HEATER
The Westinghouse AUTOMATIC GAS WATER HEATER
General
This Idea
Helped Sell
327
Water Heaters
•
Weider and Son
Rochester, N. Y.

WATER HEATERS
This Idea
Helped Sell
692
Water Heaters
•
Jimmie West
Los Angeles

He Gets the Big Jobs . . . *By Emphasis on the Little Ones*

The Scott Company, with a 5 million dollar annual business, makes an all-out pitch for the $5.00 jobs too. Reason: Little jobs lead to the big ones

A SHORT time back, the WALL STREET JOURNAL headlined a feature article about the Scott Company, of San Francisco, as "Success Story—Hole-in-the-Wall to $5 Million".

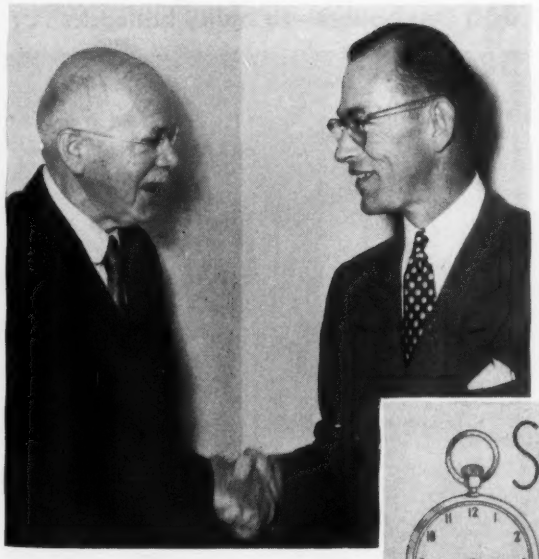
The Scott Company, which has done such big jobs as Parklabrea and Park Merced (both Metropolitan Life Insurance projects), is a strange mixture of success. When the company was founded in 1903 (a few years before the devastating San Francisco fire and earthquake), it engaged only in heating and ventilating contracting. Then came the earthquake and reconstruction—and Scott plunged into plumbing, not only contracting, but small jobs as well.

Today, Scott remains somewhat of an enigma among plumbing-heating-ventilating contractors: it is actively engaged in some of the biggest contract jobs in the West, yet it still worries about the housewife and the leaky faucet.

Some plumbing contractors strain at the leash to be rid of little jobs, so they can hit the higher-profit contracting field. But not Scott. It sees in small jobs: (1) A "great absorber," which gives year-in, year-out employment to its 400-man force, 300 of whom are engaged in new construction, 100 in plumbing and heating repair jobs; (2) leaky faucets have tided the company over the rough spots, and have allowed it to keep its most skilled, old-line employees. Some men have been with the company 45 years, since the day it opened shop; (3) small jobs have built customer confidence on a wide-based, community level, and have therefore led to the big contracts; (4) a lot of small jobs have put more than 100 jobbing trucks on the streets of San Francisco and Los Angeles, which have kept the Scott name and colors (green and light yellow) before the public. (Scott has always bought one make of truck, and has so many that the manufacturer has a special paint reserved for the company, tabbed "Scott Green.").

How does a firm so diversified merchandise? Wm. P. Scott, Jr., the firm's senior partner, concedes that the company merchandises no appliances, except as part of big contracts. "We've done the contracting on many a big department and appliance store, so we don't feel that we should compete with them," he says.

But it does advertise—institutionally. It sponsors H. V. Kaltenborn's nightly, 15-minute commentary over San Francisco's KNBC, 5:15 to 5:30 p.m. This costs the



Facing page: Main offices and shop of the Scott Company of San Francisco. Parked in front are 30 of the company's 100 trucks. Soil pipe piled at left is part of large inventory.

At left: H. V. Kaltenborn, nationally known news commentator, is sponsored three times a week by Scott. He is shown being greeted by Otis C. Miller, partner in the firm.

Below: This mailing piece is sent to all prospects of the Scott Company, which appropriates $100 a day for radio advertising. The mailing piece adds listeners for broadcasts.

SCOTT CO.
LARGEST MECHANICAL CONTRACTOR IN THE WEST
BRINGS YOU
TOPS IN NEWS COMMENTARY
MONDAY - WEDNESDAY - FRIDAY
5:15 TO 5:30 PM ON KNBC DIAL 680
TUESDAY - THURSDAY
For the finest installation, service, & maintenance on any plumbing, heating, ventilating or refrigeration job, call Scott Co. Service is a legend with Scott Co.
In San Francisco . . YUkon 2-0400
In Oakland . . . GLencourt 1-1937
RICHARD HARKNESS
H. V. KALTENBORN

company $100 a night, five days a week, for 13 weeks. "It's a lot of money," says Scott, "but we splurge once a year for 13 weeks and it pays off."

Scott is specifically aiming, on these broadcasts, at the commuter driving home in his automobile. A careful analysis of its best small job customers shows why. The commuter: (1) Can afford to own and drive his own car, and this means, in the San Francisco area, that most of them also own their own homes. Scott wants to reach home-owners. It is not interested in reaching a day-time, housewife audience, since it feels that the husband helps to decide such things as who'll do the kitchen remodeling, and who'll install new ventilating and plumbing systems. It frankly wants to reach the man with money to spend—and that, figures Scott, is the commuter who can afford the high cost of driving to and from work in the San Francisco Bay area.

At the same time, 5:15 to 5:30 p.m. is the time when the greatest number of commuters are on the road, headed home after work. And KNBC is a top station, with Kaltenborn (who's on Monday, Wednesday and Friday) a top attraction. On Tuesday and Thursday, at the same time, Scott sponsors Richard

(Please turn to center of next page)

How Scott Promotes Big and Little Jobs

A MAJOR PORTION of the Scott advertising appropriation is spent on radio advertising—which usually emphasizes, in the same script, the Scott Company's ability to handle contracts "anywhere from 5 to 5 million dollars."

A typical script, preceding the H. V. Kaltenborn news broadcast, says:

Announcer: "Kaltenborn Edits the News!

"NBC brings you H. V. Kaltenborn, Dean of America's commentators, with his up-to-the-minute analysis of important news developments . . . presented by Scott Company, the West's largest mechanical contractors . . . but first, this message.

"Time tells its own wonderful story. In business, just like in the rocky structures of a canyon, time leaves an enduring mark. It took 50 years for Scott Company to build its reputation. Yes, 50 years' . . . a weekend to a redwood tree, but time enough for Scott Company to be recognized as the West's largest and finest contractors of plumbing, heating and ventilating.

"And in this half century, Scott Company has built its prestige *on doing the smallest job as well as the largest . . . from a simple home thermostat adjustment to the expert installation and maintenance of a huge industrial heating or ventilating system.*

"Remember the name . . . Scott Company . . . S - C - O - double T . . . Scott Company . . . for the finest in plumbing, heating, ventilating and refrigeration.

"One hundred green Scott Company service trucks are as

(Please turn to page 177)

William Scott, Jr.

Here's why we make an all-out effort to get the $5 jobs as well as the 5 million dollar ones . . .

by William Scott, Jr.
Senior Partner
The Scott Company

1—Small jobs are "great absorbers," which give year-in, year-out employment to our 400-man force —300 of whom are normally engaged in new construction and 100 in plumbing and heating repair jobs.

2—Leaky faucets have tided our company over the rough spots, and have allowed us to keep our most skilled, old-line employees. Some of our men have been with the company 45 years, since the day we opened shop.

3—Small jobs have built customer confidence on a wide based, community level, and have therefore led to the big contracts.

4—A lot of small jobs have put more than 100 of our jobbing trucks on the streets, which have kept the Scott name and colors (green and light yellow) before the public. (Scott has always purchased one make of truck, and now has so many that the manufacturer has a special paint reserved for the company, tabbed "Scott Green.")

From 29,000,000 Btu boilers—to balky ballcocks . . .

The five huge boilers shown above (hourly capacity, 29 million Btu) are symbolic of the sort of big jobs the Scott Company has been getting. Macy's, San Francisco, was the site of installation. How Scott Company handles big jobs like this one, will be told in the second article of this series, scheduled for a forthcoming issue of D. E.

He Gets the Big Jobs . . . By Emphasis on Little Ones

(Continued from botton of page 99)

Harkness with his news analysis. To thousands of prospects Scott mails notice of the programs (page 99), with its slogan: "Scott Company—largest mechanical contractor in the West."

Scott's claim that "We Fix Anything"—actually the result of an over-zealous KNBC script writer—brought a call recently from a blind man, whose player piano wasn't working. Scott promptly sent out one of its electrical repairmen and fixed the piano. It also got KNBC to go easy with that "We Fix Anything" line.

Scott offers no bargain basement prices, never intends to, and finds that it doesn't have to. Says Scott, "We want people to give us work for one reason only, because we do our work well, and they know they can depend on us. Anything else is makeshift and won't keep you in business in the long run." And then he adds, "We use the little jobs to help us get the big ones. By doing the small ones carefully we find that people appreciate our work and remember us when the big jobs come up."

In its minute before and after Mr. Kaltenborn goes on the air for Scott, the company advertises institutionally. Some typical examples: "Today, the Scott Company drives 100 trucks so that it can handle the Bay area's plumbing needs—any plumbing installation from $5.00 to $5,000,000 can be handled." . . . . . "That's our job, big jobs and little, one of the largest plumbing companies that serves California—the Scott Company." . . .

NEXT INSTALLMENT... How Scott Company Handles

...Scott handles them all!

One of the Scott Company's 400 servicemen is shown above repairing a faulty ball cock. Emphasis on the small jobs helped this West Coast firm to grow big.

"Yes, Scott Company in 50 years of service has earned the reputation of being the largest mechanical contractor in the West by being able to apply its vast facilities and know-how even to the smallest job."....

Analyze these sales messages and you come up with Scott's policy: (1) It never tries to appear "small" to the home-owner, and "large" to the big builder; (2) it plays itself up as "big" to everyone—banks on its very "bigness" to get the small jobs as well as the large; (3) it believes that people put more faith in the big company that admits it's big, and has resources behind it.

Scott also goes out actively for the business of management concerns, the people who operate apartment buildings for their owners. Right now it does the work

(Please turn to center of page 181)

the Big Jobs

1952 Outlook...

for GAS HEATING AND APPLIANCES

AGGRESSIVE MERCHANDISING and prodution-line ingenuity, without resort to "war emergency" models, will enable the gas appliance industry to meet public demand for gas home-heating equipment, ranges and water heaters in the first half of 1952, Harold Massey, assistant managing director of the Gas Appliance Manufacturers Assn. told DOMESTIC ENGINEERING last month.

Massey said that the increased rate of industrial production of all types, a sharp rise in installment buying, and a "break at last in the public's buying apathy" have contributed to a "bullish" outlook for the gas appliance market, despite materials limitations, corporate and excise taxes and price controls which will prevent the industry from matching its record volume of last year.

Massey urged all manufacturers to accelerate their merchandising programs, pointing out that "in other times of stress, when deliveries were threatened by similar emergency conditions, companies with aggressive sales policies fared especially well in their effort to serve the public and the industry."

The 1952 forcast follows:

Ranges:

There will be enough gas ranges to meet all demands until the second quarter of 1952, when some delivery problems could develop. These ranges will be built to traditional standards of quality and performance, and there will be no 'victory' models of the type produced during World War II.

Water Heaters:

Water heaters of all types, except those incorporating storage tanks of copper or monel metal, will be available. Construction and performance standards will be maintained, although tanks may be galvanized to save zinc. The trend will be to larger tanks to provide adequate hot-water supplies.

Home Heating:

Production of home-heating equipment will keep pace with essential home construction and modernization, with sales efforts directed particularly toward parts of the country which are not affected by government-imposed gas restrictions. Lines of this equipment, will be simplified to some extent without effect on efficiency.

Refrigerators:

The outlook for gas refrigerators, although clouded by material shortages, is favorable, particularly in terms of top quality models. During the past year public acceptance of such models has been exceptional and will dictate the design of new lines to be introduced early in 1952.

Incinerators; Dryers:

It will take time to meet rapidly growing demand for gas-fired incinerators and gas laundry dryers. Design of these appliances will remain unchanged, but while supply of the former will take care of all foreseeable demand, anticipated dryer production is not likely to keep up with orders.

Commercial Cooking:

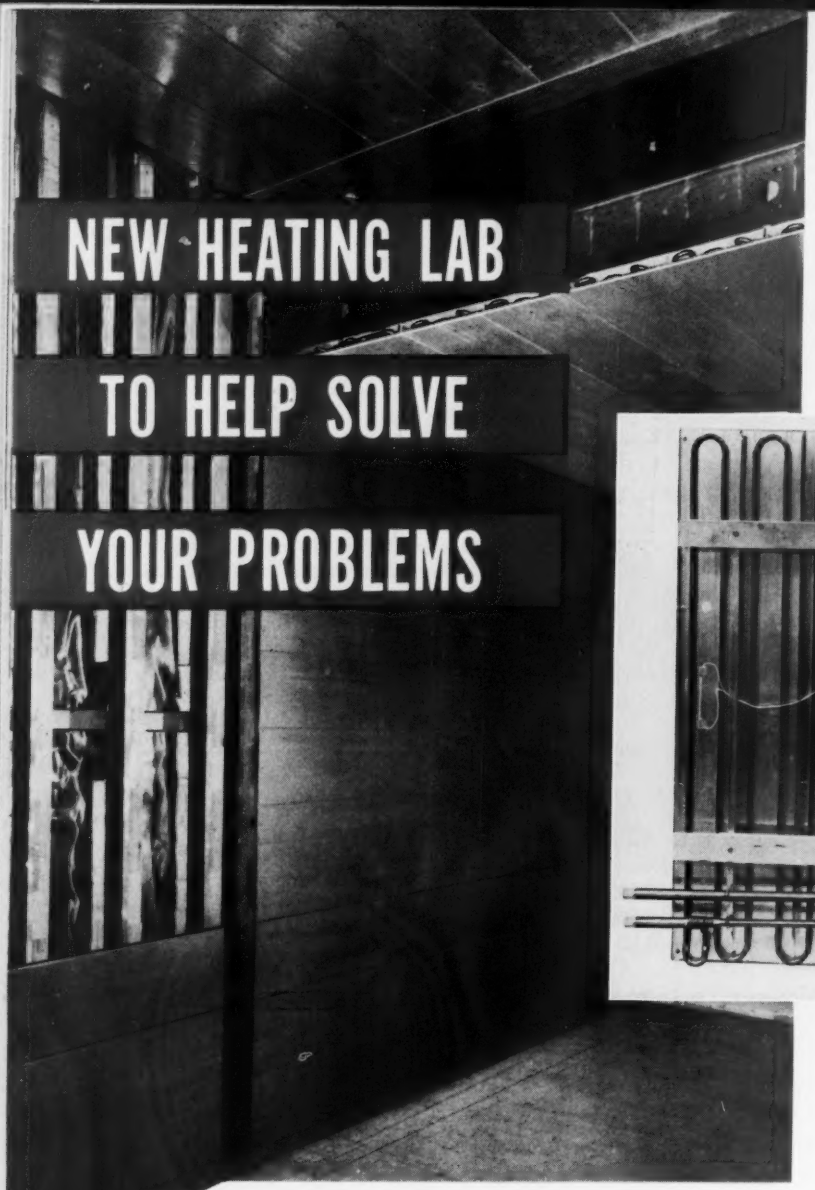
Commercial cooking equipment, no longer subject to a manufacturer's excise tax, will be in demand for needed replacements in public and institutional eating places, as well as new establishments, and output is expected to be adequate, except in certain stainless steel models.

Stock Situation:

"Stocks of household durables in our industry," Massey said, "are dropping from an uncomfortably high position to more normal levels."

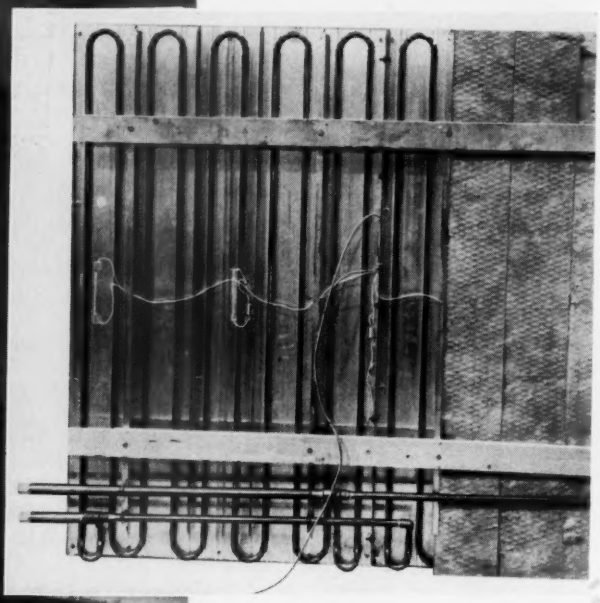
(Please turn to center of page 181)

NEW HEATING LAB TO HELP SOLVE YOUR PROBLEMS



Interier view of the new American Society of Heating and Ventilating Engineers laboratory in Cleveland, showing the lab before installation of heat flow meters. Note the vapor barrier, aluminum panels on two walls and on both halves of the ceiling which are set at different heights.

Below: Rear view of one of the aluminum panels, showing coils, piping to mains, surface thermocouple on back of panel, wiring for heat flow meters, method of insulating.

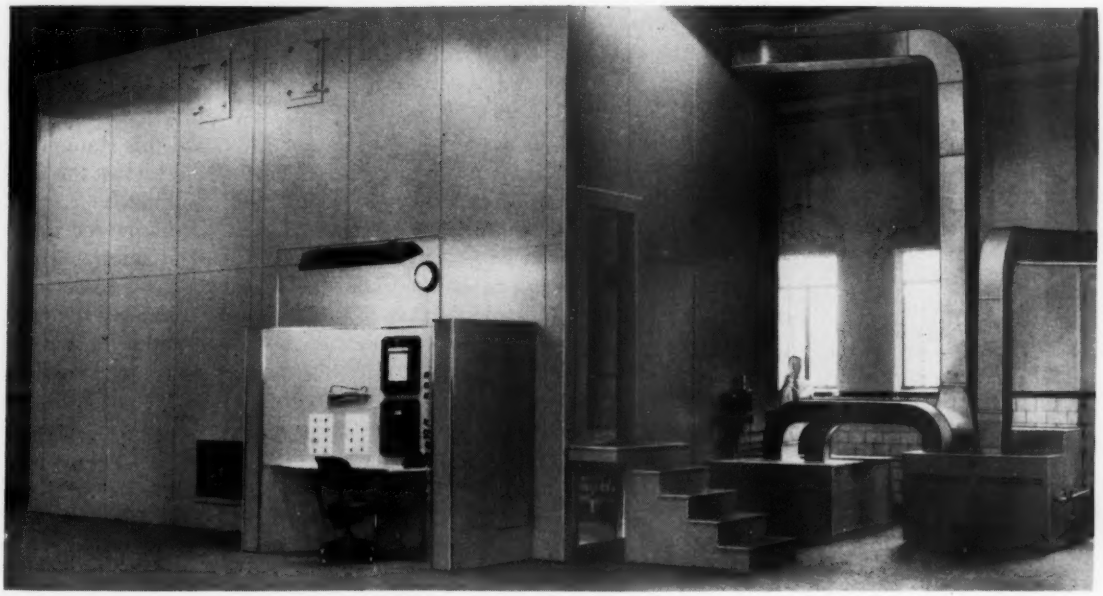


The development of universal data for the design and installation of radiant heating and cooling systems is a major goal of the new ASHVE heating laboratory in Cleveland

THE AMERICAN Society of Heating and Ventilating Engineers, in an effort to help solve the practical everyday problems of heating contractors, unveiled its new Environment Laboratory last month in Cleveland. The laboratory will be used to study human comfort in heated and cooled indoor spaces and to develop data for the design and installation of panel heating and cooling systems.

It is a large room in which the temperature of all the room surfaces and portions of each surface can be controlled separately, so that it is possible to simulate a variety of combinations of cold and warm walls, windows, floors and ceilings. For example, to simulate a corner room of a building, two walls can be cooled to the desired temperatures, while some of these walls can be held at a lower temperature to simulate glass areas.

Below: An overall view of the exterior of the new American Society of Heating and Ventilating Engineers laboratory in Cleveland, showing instrument console, entrances to crawl space beneath the stairs, and dehumidifier and duct work. The method of raising and lowering the ceiling by means of chains is demonstrated by the man at right. The ceiling is adjustable to heights from seven to 12 feet, and the overall size of the room is approximately 25 by 12 feet. Instrumentation and proposed research are described in article.



The Environment Laboratory had its origin in the belief from many quarters in the heating, ventilating and air conditioning field, that there is a lack of universal design data for panel heating and cooling installations. This led to the appointment by the society's Committee on Research of a Technical Advisory Committee on Panel Heating and Cooling to formulate an overall research program.

The program developed by the TAC divided the general research problem into four spheres of activity:

1 - Heat distribution within and behind the panel
2 - Heat transfer between the panel and the space in the room
3 - Comfort conditions
4 - Controls

The program covering the first of these points consisted of laboratory and field studies on concrete slabs and plaster panels. Many of the results have already been published as research reports and used in the preparation of the chapter on radiant panel heating in the current ASHVE Heating, Venilat-

(Please turn to top of next page)

How the Lab Will Study Heating Problems

Practical results, it is expected, will be achieved by utilizing the new ASHVE lab as follows:

- **To measure the rate and the method of the exchange of heat between the surfaces of the room and the air in the room, as they are affected by such factors as temperature of the surfaces, temperature and humidity of room air, rate of ventilation, character and position of the surfaces.**
- **To determine the influence of radiation on human comfort, with the probability that this factor can then be used to improve the ASHVE Comfort Chart.**
- **The room may also be used for a study of the removal of heat from a room by means of heat-absorbing panels and an evaluation of the flow of heat from sources within the room to cooler panel surfaces.**
- **An evaluation of the effect of different interior surface finishes, such as type and color of paint and wall paper, on the performances of panels, will be made.**

(Continued from preceding page)
ing and Air Conditioning Guide.

Early in the TAC discussions it became apparent that in order to study points two and three of the proposed program, it would be necessary to construct a full-sized room wherein the temperature of all the room surfaces (and portions of each surface) could be controlled independently. This would allow studies under conditions with widely differing temperatures.

So that the room could also be used for a study of the relationship between human comfort and radiation, it was designed to permit division into two rooms when desired.

The room is approximately 25 ft by 12 ft, with a ceiling that is adjustable to heights from 7 to 12 ft. When divided in two, each room will measure 12 ft by 12 ft. The outer shell is of ¾-in. plywood on a light steel framework. The floor is three ft above the floor of the main ASHVE Laboratory (in which it is housed) to provide a crawl space for piping and wiring.

All interior surfaces of the room are formed of aluminum panels. Attached to the back of these panels are ⅜-in. copper coils on 3-in. centers, connected to mains located in the crawl space.

The room has been designed to permit surface temperatures which may be encountered at outdoor temperatures as low as zero degrees F. Cold wall areas can be maintained at temperatures as low as 40 F; simulated glass areas as low as 20 F. Floor and ceiling surfaces can be kept at any desired temperature up to 180 F.

Air can be supplied at simulated outdoor temperature for studying the effect of infiltration. Two changes per hour of air down to zero F can be supplied to the room at simulated window locations. This air is treated in a sorption type dehumidifier and cooled to simulate dry outdoor air. The same system also furnishes dehumidified air to the crawl space and to the space between the wall panels and the outer shell to minimize condensation behind the panels.

The refrigeration compressor, heat exchanger, tanks, pumps and

(Please turn to top of page 181)

HOW A SALESMAN IS MADE!

• Part Two of a Series - Recruiting •

MANY of our readers have undoubtedly heard this statement: "All selling is just about the same. If a man knows the fundamentals of salesmanship, he can sell anything."

But it just isn't that easy, as many a retailer has discovered to his sorrow. So he isn't so much interested in the "art of salesmanship" as he is in knowing how to sell what he's selling.

Last month, in the first article of this series, we discussed the need and desirability of a sales organization in the operation of a retail plumbing, heating and appliance store. However, it's a long step from establishing a need and coming up with the type of organization necessary. This month, therefore, we will discuss the first step in that direction: getting the right man, or men, to do the job.

Under today's competitive conditions, the desirability of careful recruiting and selection of sales personnel can hardly be over emphasized. Like a chain, a sales organization is only as strong as its weakest link. A contractor-dealer might have excellent methods for training, motivating and compensating his sales force, but if he doesn't have the right men to begin with, his efforts are largely wasted.

How Salesmen Are Recruited

There are several general sources for recruiting salesmen which have proven effective. They are: (1) newspaper advertising, (2) schools and colleges, (3) employment agencies, (4) promotion of people from within the company, (5) personal acquaintance of the owner or sales manager and, (6) recommendations of other salesmen. Of the six, newspaper advertising (classified ads) and promotion from within the company lend themselves especially well to our industry, and, in the majority of cases, are the two methods used most often.

Schools and colleges have also been used with some success—especially where engineering knowledge is required. Sometimes the owner, sales manager or one of the other salesmen know of a person outside the firm whom they feel would be the right person for a sales job. This latter method is perhaps not too good since friendship for the individual frequently obscures a professional appraisal of the individual's actual ability.

Size of Business Is a Factor

The size of a business determines to a large extent the recruiting methods used. Obviously, a large manufacturer who is constantly employing salesmen would need to use all the methods we have listed here as well as many

(Please turn to center of page 186)

How 250 Contractors Recruit Plumbing & Heating Salesmen

Method One

Within Company:

One hundred sixty nine contractors (68 percent) report that outside salesmen are selected from among their present shop and office employees. Advantages: These men already know plumbing, heating and appliances from having worked with them in other phases of the business, which makes it easier to train them for the outside selling job.

Method Two

Want Ads:

Thirty-five of the dealers reporting (14 percent) use the classified columns of their local newspaper to recruit men for outside sales work. Advantages: Newspaper ads represent the quickest and easiest method of reaching the broadest possible number of experienced salesmen who are seeking better positions. Cost is relatively low.

Method Three

Schools; Agencies:

Twenty one contractor-dealers (9 percent) use this method to recruit outside salesmen. Advantages: By alerting schools and employment agencies, domestic engineering dealers are able to select from the bright young men those with special qualities (technical background, etc.) applicable for selling in the plumbing, heating and appliance field.

Method Four

Spotting By Owner:

Nine contractors (3 percent) recruit salesmen by personally contacting business acquaintances, friends and other individuals they feel will make good salesmen. Disadvantage: All too frequently a person's opinion is influenced by friendship to the extent that the prospect's actual abilities are not properly evaluated and the wrong man is hired.

Method Five

Other:

Sixteen contractors (6 percent) use various other methods for recruiting salesmen. Among them: window signs, voluntary applications, recommendation of other salesmen, watching "situation wanted" columns of newspapers and others. Most of these methods apparently represent a "one-shot" effort which works out occasionally.

• Next Month - Selecting Salesmen •

HOW THE LEADERS SELL DISHWASHERS AND DISPOSERS

3000 "Yeses" Can't Be Wrong!

That's how many dishwashers and food waste disposers Vander has sold as part of the house plumbing contract with these pitches

They'll Work For You, Too!

ASK THE family doctor and he'll tell you that man has thirteen pressure points, where a little pressure applied in time can save a life. But the family doctor would likely be skeptical if a plumbing contractor told him that every contract has six "pressure points" of salesmanship—where a little "sales pitch" can save an appliance sale.

Vander the Plumber of Santa Monica, Calif., has been dissecting plumbing contracts for some 22 years and has come to the conclusion that they, like man, are susceptible to subtle pressure.

Vander's manager, Bob Hurt, and assistant manager Bob Shoup stress this analysis. Basically, the plumbing contractor believes that there are six points before and during a contract job where a contractor, with only gentle hints and without application of any "steam roller" tactics, can inject salesmanship and up-sell the contract. As with first-aid pressure points on the human anatomy, too much pressure where it concerns the plumbing contract may do more harm than good. Instead, the subtle, gentle approach is stressed by the California contractor.

Says Shoup, "This kind of salesmanship definitely appeals to our customers. You see and hear so much of the other kind of salesmanship today; the high pressure stuff, which we think is losing its effect through over-use and repetition.

"We have learned that proper timing and subtle suggestion are more effective in the long run."

The "sales pitches" described and illustrated on

(Please turn to center of page 190)

When a contractor or home owner phones, suggesting that Vander bid on a plumbing job, somewhere during the conversation a mention is made of a dishwasher and disposer. Maybe it's a casual mention, like: "Incidentally, are you considering the installation of a dishwasher and food waste disposer on this job?"

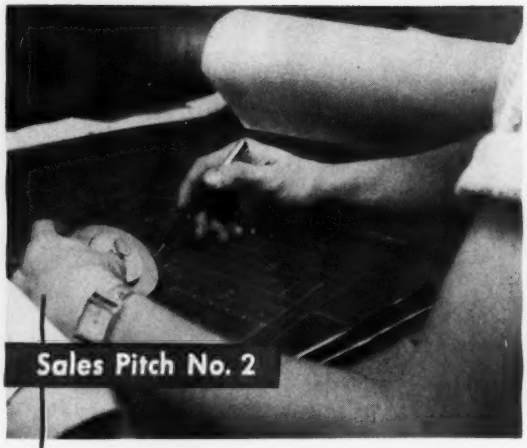
There is no attempt to sell the units, unless the customer is obviously eager and receptive. If so, Vander follows-up immediately with a sales talk designed to have the specifications call for installation of the dishwasher and food waste disposer. Sometimes it's just that easy!

When Vander hands in its job bid, Shoup or Hurt ask casually, "And what about the dishwasher or disposer—or both?" Perhaps the contractor says, "We'll decide about these units later," or "Well, the owner may be around to talk it over with you."

In either case, Vander the Plumber truthfully assures the building contractor that "There's plenty of time yet to make up your mind. Installation of the units is just about the last job anyway."

As Vander sees it, the door is still open for installation of the units. No high-pressure salesmanship has been applied which would force a decision one way or the other.

But more important, the steady build-up of the idea of dishwasher-disposer installation is taking effect.



When plans or specs come in, Vander immediately scans them to see if provision is written in for a dishwasher and disposer rough-in. If the rough-ins are stipulated, then Vander immediately knows that he faces a receptive client, already more than half sold on the units.

If not, Vander usually advises the building contractor that, in the usual course of things, the company roughs-in for dishwashers and disposers without extra charge.

Again, no high pressure, just the casual mention of how Vander the Plumber usually handles these routine plumbing jobs.

No spec or bid is handed back to the building contractor or to the home-builder until a space on the back of Vander's bid sheet labeled "Remarks and If's" is filled in, suggesting installation of dishwasher-disposer units and estimating their cost.

"This," says Bob Shoup, "is the most important single phase in our administration of first-aid to our plumbing contracts. For the estimate under the 'If's' column stays with the job, and is seen by both building contractor and home-owner whenever they consult our bid. Many times they get the idea and buy."

The owner and his wife drop in to discuss the units. Usually the wife has already more than half convinced her husband to OK the installation when they drop around to visit Vander's display room.

Again, Shoup or Hurt use the subtle approach —no high pressure. They merely demonstrate the units, underline their demonstration with, "If you put in the units at the time we install the rest of the plumbing, we can give you a better price—figured right in with the bid and included with the financing. However, if you wait until after we're off the job and then call us back, we'll have to figure a separate installation charge."

If the customer is still undecided, Vander the Plumber assures him that there is still time for a final decision.

Culmination of this entire subtle selling program, which began when the contract was first considered, winds up at the crucial moment when the rough-in is finished. It's now or never, as far as dishwasher and disposer are concerned, for Vander knows from experience that the customer will not likely call him back to tear out the new installation.

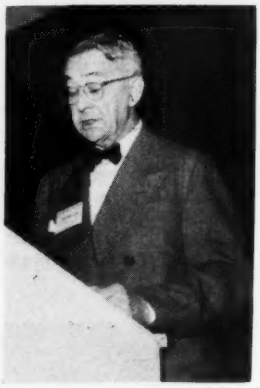
Vander phones the home-owner or contractor, or both, advises them that he's about to complete the job, and that "Now is the time to make a final decision about your dishwasher and disposer."

This is the pay-off moment, the test to see if subtle, constant, yet easy-going salesmanship has built up into a hard-hitting sales message. Vander has found in a surprising number of cases that it has.

Where Do We Go From Here?

Wholesalers, at three industry meetings, decide it's a good idea to watch the material situation, and at the same time gird for aggressive selling

Charles G. Cowan, Atlanta, Ga., recently reelected president of the Southern Wholesalers Assn.



W. A. Brecht, president of Hajoca, Philadelphia, who spoke to the Southern Wholesalers.

Mid-Atlantic:

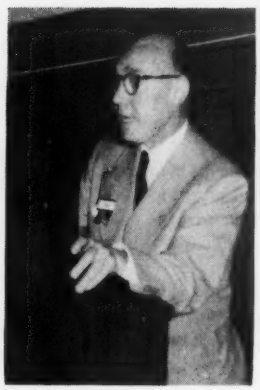
AN INTERESTING and informative panel discussion by industry leaders on problems of the day was a highspot of the Mid-Atlantic Wholesalers Assn. annual meeting, held October 8-9 at the Hotel Mayflower in Washington, D. C.

NEW OFFICERS of the Mid-Atlantic Wholesalers Assn. are (l. to r.) G. H. Hertz, Allentown, Pa., director; R. C. Green, Jenkintown, Pa., treasurer; J. H. Reisenwitz, Vineland, N. J., director; S. O. Morton, Pleasantville, N. J., director; G. A. Barker, Philadelphia, 1st vice president; C. C. Lowry, Philadelphia, president; J. A. McCann, Atlantic City, 2nd vice president; H. A. Lentz, Philadelphia, director; M. H. Tice, Lebanon, Pa., director, and H. D. Richards, executive secretary of the association.

The question of the day seemed to be "Where do we go from here?"—and the panel discussion indicated several definite trends. Donald Couch of American-Standard stated that his company's answer to the question was to double its sales force and go out and do plenty of old-fashioned door-to-door selling. "It is our feeling that more aggressive selling and merchandising will be needed in the coming year," Couch stated. He feels that if everyone gets out and does a real selling job business will be good. He cautioned the wholesalers to make every effort to carry complete stocks to back up aggressive sales campaigns by the industry. While admitting that his company recognized that they would be tight on some materials for an indefinite pe-

(Please turn to center of page 175)

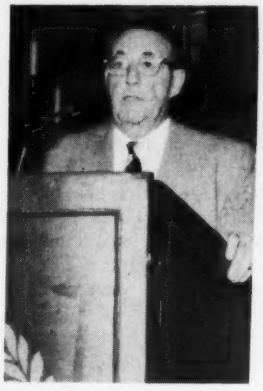
O. H. May, of Mobile, Ala., newly elected vice president of the Southern Wholesalers.



C. C. Lowry, of Philadelphia, the newly elected president of the Mid-Atlantic Wholesalers.

N. W. Foy, Cleveland, sales manager of Republic Steel Corp., who addressed the CSA.

H. Somerville, president of the American Institute of Wholesale Plumbing & Heating Assns.



C. L. Wilkins, president of Wilkins Supply, Peoria, Ill., newly elected president of the CSA.

John H. Ewald, of James E. Degan Company, Detroit, retiring president of the CSA.

C. J. Ramsberg, Jr., sales manager of Spang Chalfant Co., who addressed the Southern group.

J. H. Martin, Charlotte, N. C., reelected as first vice president of the Southern Wholesalers.

Southern:

"IF WE RECOGNIZE our opportunities, use orderly procedures and utilize the tools available to us, it seems to me that a period of fullness and prosperity lies ahead for our industry."

This observation, from the address of J. H. Martin, vice president of the Southern Wholesalers Assn., characterized the atmosphere surrounding the association's 23rd annual meeting in Palm Beach, Florida, November 4-6.

In support of his prediction, Mr. Martin reviewed the factors which he thought would have an effect on future business conditions. In his own words, they are:

1—"To a great degree, our industry comprises part of the so-called shelter group. If we analyze further, we know that man must have shelter as he must have food and clothing. So it seems to me that, as an industry, we occupy an advantage of no little proportion . . . *if properly exploited.*

2—"Statistics indicate that our standard of living is by far the highest in the world. This means, in itself, a natural acceptance of the products we sell—as compared to the commodities of many other industries for which acceptance, and then demand, must be created. Our chief competition comes not from within our own industry, but from other industries which, of a necessity, must create desire and demand for their products to a much greater degree than does the plumbing, heating and appliance industry.

3—"The high level of employment, our increasing productive

(Please turn to center of page 181)

Central Supply:

CONSENSUS OF OPINION by speakers at the annual meeting of the Central Supply Assn., in Chicago, was that steel will be plentiful by Spring; copper will be extremely short for the next two years, and the scarcity of aluminum will gradually ease up.

William Simon, CSA Washington representative, and Norman W. Foy, of the Republic Steel Corporation, spoke about the metals situation, with both predicting all-time production highs for copper and steel. Mr. Foy pointed out that the success of the present Controlled Materials Plan is dependent upon a strict compliance on the part of the government as well as the user.

Also speaking at the convention,

(Please turn to top of page 175)

Sixty Ways to Keep Your Store Selling...

(Continued from bottom of page 87)

domestic engineering dealer can tie-in a sales promotion with a holiday. According to A. J. Cumings, Clinton, Iowa, tie-ins with local holidays create prestige as well as sales. (See suggested Xmas promotional programs, November issue, page 150).

☐ Do you endeavor to work out an incentive plan for employees which will give them a greater interest in the store?

☐ Do you set up your displays so that the prospective customer is carried through the entire showroom as he looks from one display to another?

☐ Do you use showmanship and sparkling promotions to increase your sales volume? When Bob Schaefer of Cullman, Ala., sponsored an automatic washer contest, he strung a line of laundry across the main street of the town. (See November 1950 issue, page 96.)

☐ Do you study the methods used by other stores to see what methods can be adapted for use in your own store?

☐ Do your trucks do a selling job? John G. Webster, Washington, D. C., says his trucks are silent salesmen which sell the public on trading with Webster wherever they go. (See page 96, this issue.)

☐ Do you have a personal word or two with customers, whenever possible.

☐ Do you have men technically trained and able to talk to a customer in a manner that will convince the customer that they know their business and that the products are worth the price charged?

☐ Do you make every effort to find out the type of repair needed before sending a man to the job, so that the mechanic will have the proper tools and materials and thus prevent "call backs?"

☐ Do you take the lead in planing a remodeling job and see that the whole job is well organized, so that the owner has the least possible inconvenience?

☐ Do you express genuine regret when unable to supply customers' requirements?

☐ Do you avoid the patronizing phrase "we can let you have it," and use instead "we will see that you get it?"

☐ Do you convince the customer that plumbing codes are for his own protection, by explaining the reasons behind the code?

☐ Do you change window displays at regular intervals to avoid a "tired" window appearance?

☐ Do you keep making attractive innovations in the store, featuring one item after another to give old customers something new to look at?

☐ Do you give prompt 24-hour emergency service?

☐ Do you have a clean, neat and orderly place of business?

☐ Do you participate in local charity and civic organizations such as the Red Cross?

☐ Do you attend farm meetings to keep informed on the farmers' problems?

☐ Do you influence town officials to provide parking space for customers?

☐ Do you avoid extremes in shortening store hours, having due consideration for customers' shopping time?

☐ Do you conduct seasonal promotions for appropriate goods?

☐ Do you give away calendars, pot holders and other small household items which serve as a constant reminder of your goods and services?

☐ Do you consult customers regarding ways of improving service?

☐ Do you do favors for customers gladly, not grudgingly?

☐ Do you pay extra attention to newly married couples?

☐ Do you act obliging over minor requests from customers?

☐ Do you remember good customers with Season's Greetings at Christmas time?

☐ Do you handle all complaints promptly and courteously?

☐ Do you instruct all salesmen to keep a "want" book?

☐ Do you review stock regularly to find out why certain lines are not selling?

☐ Do you urge workmen to be careful of their language, to be courteous and friendly to the customer and to be desirous of doing the best job they can do so their services will be in demand?

☐ Do you have selling prices displayed in such an orderly manner that the customer will know he is getting a fair deal and is not being charged according to your idea of what he will stand?

☐ Do you spend sufficient time with employees to convince them that their continuous employment is dependent upon the public's desire to buy your products.

☐ Do you act willing to install anything the customer desires, but at the same time sell the customer on the idea that the contractor-dealer is a better source of his needs than anyone else?

☐ Do you always remember that the customer is the most valuable thing that enters your door? Your very livelihood depends upon his willingness to let you serve him.

☐ Do you show customers photographs of past kitchen, bathroom, etc., installations so they can visualize how their own home will look with your products?

☐ Do you have small parts displays, or a faucet repair bar, to attract the "home handyman" and at the same time lead to bigger sales?

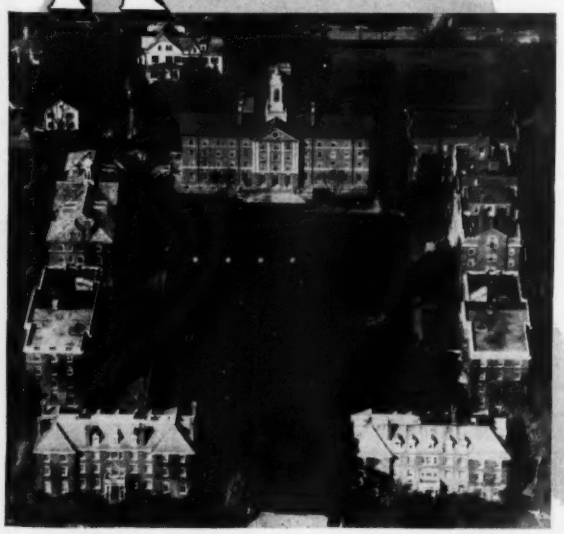
☐ Do you stress "We sell, We Install, We Service and We Guarantee?"

AMERICA'S LEADING COLLEGES RELY ON KEWANEE HEAT

For over three-quarters of a century America's leading colleges, schools and universities, have specified Kewanee Steel Boilers when they needed dependable and economical heat. For in these and similar institutions where healthful heat is required 24 hours a day, and economy an important factor, reliable heating equipment is a "must."

Through the years Kewanee has successfully met these requirements with a good product, until today, they are universally recognized as the leader in the field.

KEWANEE STEEL BOILERS



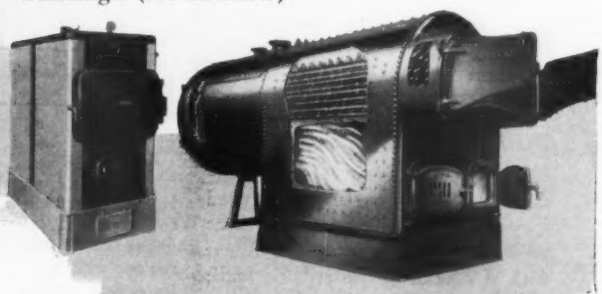
KEWANEE "on the job" AT RADCLIFFE

Building	*Erected*
15 Farwell Place	1934
6 Ash Street	1934
Health Center	1934
Buckingham House	1935
Cabot Hall	1936
Everett House	1936
President's Residence	1937
Infirmary	1941
Longfellow Hall	1945
Ames House	1948
Moors Hall	1948

Here's an outstanding example of Kewanee on the job.

In 1934, Radcliffe College, Cambridge, Massachusetts, installed its first Kewanee Boilers in two of its dormitories. As Radcliffe grew, Kewanee Boilers were chosen for other buildings... the latest being Moors Hall where two heavy-duty "500" Series Kewanees were installed.

Today, 14 Kewanee Boilers are heating 11 Radcliffe Buildings. (*See list below*)



KEWANEE SQUARE-HEAT KEWANEE "500" SERIES

KEWANEE BOILER CORPORATION
KEWANEE, ILLINOIS
Eastern District Office: 40 West 40th Street, New York City 18
Division of American Radiator & Standard Sanitary corporation

BUILDING BETTER BOILERS OVER 80 YEARS

Serving home and industry

AMERICAN-STANDARD · AMERICAN BLOWER · ACME CABINETS · CHURCH SEATS · DETROIT LUBRICATOR · KEWANEE BOILERS · ROSS HEATER · TONAWANDA IRON

Questions and Answers

Air Infiltration

To the Editor:

In figuring the heat loss of a house the linear feet of cracks about windows, doors, etc., are taken into consideration. Also, I know that there are tables to give you the cubic feet of air leakage about different types of cracks.

However, I am wondering how accurate this data need be for purposes of the average warm air installation. That is, would it be possible to merely put down a rough estimate for this factor, or should the nature of the cracks be examined and a more accurate figure obtained.

Since there are so many variable factors involved, I have wondered if it was worth any extended effort. However, I am not certain, and I would appreciate your opinion.

Illinois D. B. S.

To the Reader:

The amount of air infiltration is dependent upon the wind velocity, the width of the cracks, the linear feet of cracks, etc., through which air inleakage occurs. Generally it is not possible to fix accurate values definitely for any or all of the foregoing items. Therefore, the calculation of air infiltration by any method must be at best a reasonable approximation.

Use Approximate Date

The number of linear feet of window and door cracks to be used may be empirically fixed as: rooms with one exposure, all the linear feet of cracks in the outside wall; rooms with two exposures, the linear feet of crack in the outside wall having the greater amount of cracks; and rooms with three or four exposures, the length of the cracks in the wall having the greatest amount; but in no case must less than one-half the total cracks in the outside walls be used. The foregoing rule is based on the assumption that the angle of incidence of the wind on the exposed side or sides may vary from 0 to 90 deg.

Troublesome Hot Water Heating System

To the Editor:

I am sending you a sketch of a hot water heating system that was supposed to supply 140F and 180F water. The problem is this: The safety gas valve on the heater keeps shutting off the gas, and only the booster heater burns, with the main burner on this heater shutting off at 140F. (See Fig. 1, below.)

Now it seems to me that the cold water line going to the storage tank is wrong and that it should be cut off, but there should be a line from the bottom of the storage tank to the bottom of the booster heater.

Will you please send me a drawing of the correct way to install this system?

Tennessee P. N.

To the Reader:

We feel that the hookup suggested in Fig. 2, below, will solve the problem. Please note that a connection is made between the bottom of the storage tank and the bottom of the automatic heater by removing the drain-cock from the heater. This provides circulation between the tank and the heater.

(Please turn to top of page 114)

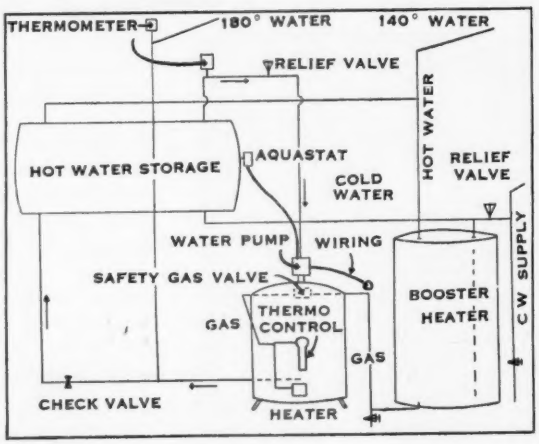


Fig. 1: Sketch supplied by reader of a hot water heating system designed to supply 140F and 180F water. Safety gas valve on the heater keeps shutting off the gas, and only the booster heater burns consistently.

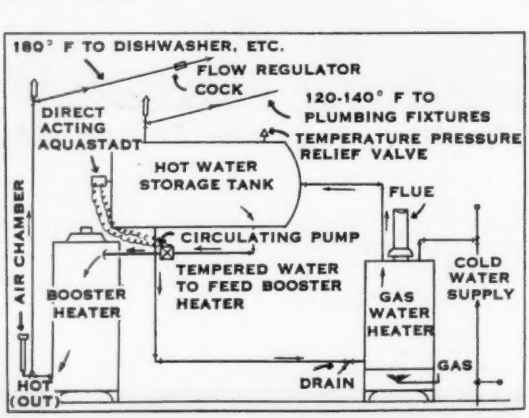


Fig. 2: At right is our suggested hookup to solve this reader's problem. Note that circulation between tank and heater is provided for by removing drain-cock from heater and supplying the connection shown.

Another Case of COPPER WHERE IT COUNTS

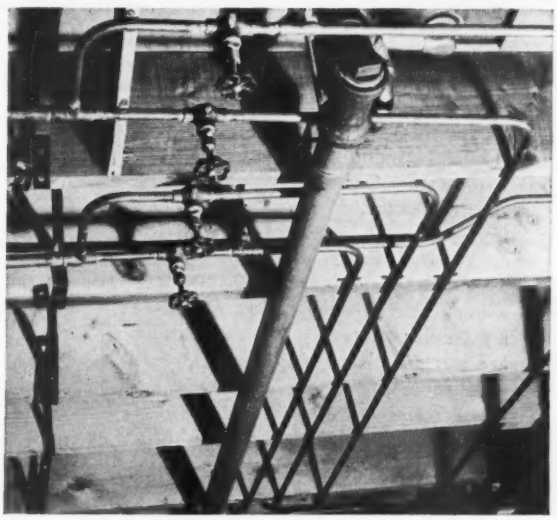
MOHAWK GARDENS, ROME, N. Y.

THE very scarcity of copper has served to point up the many merits of this metal better than anything we might say about it. For, when architects, builders and contractors have tried to find a substitute, they soon discovered many places in building construction where there just isn't any substitute. And they don't hesitate to tell us so.

Two mighty important copper spots are the heating and plumbing lines. That's why Revere Copper Water Tube was used for the entire heating system and for the hot and cold water lines in the plumbing system at Mohawk Gardens . . . the owners were building for permanency.

Although quantities are necessarily limited you can still use Revere Copper Water Tube for domestic hot and cold water lines, underground service lines, industrial processing and for gas equipment.

See your Revere Distributor. He will advise you of the availability of materials and, in the event you wish to discuss your technical problems, put you in touch with Revere's Technical Advisory Service.



NO WIDE OPEN SPACES are needed for wrench swinging when Revere Copper Water Tube is used. It is easily joined with solder or compression fittings, and requires fewer of these fittings because it is easily bent and comes in 60'-length, soft-temper coils. It also is available in hard and soft tempers in straight lengths. Note how *neat* an installation is made possible with Revere Copper Water Tube, too. Shown is part of the 31,000' of Revere Copper Tube used for heating and the 24,240' used for plumbing in Mohawk Gardens, Rome, N. Y. Architect, Harold G. Rice; Plumbing and Heating Contractor, O'Shea Supply Company; Builder, A. H. Pearsall, Inc. . . . all of Rome, N. Y. Revere Copper also was used to flash the roofs and windows, as well as for the gutters and downspouts.

REVERE 150th YEAR OF SERVICE TO AMERICA

COPPER AND BRASS INCORPORATED

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SEE "MEET THE PRESS" ON NBC TELEVISION EVERY SUNDAY

Questions and Answers

(Continued from page 112)

When the temperature in the heater or the tank reaches the predetermined setting, the gas burner shuts off.

When water is drawn from the 180F line, the booster heater heats the water as fast as it is drawn in. It has only to boost the temperature from 120-140F to 180F, because the supply is taken from the storage tank.

Warm Air Duct Insulation

To the Editor:

I would like your opinion on insulation of forced warm air ducts.

I have discussed this matter with various heating men. Some contend that heat loss through uninsulated ducts is beneficial under the floor or in the attic, due to the fact that the heat loss through the floor or ceiling is lowered. Others use one thickness of air cell asbestos insulation, and some wrap their pipe with several layers of 10 or 12-lb asbestos paper.

My reference material indicates that several layers of 10 or 12-lb asbestos paper may create more heat loss than uninsulated ducts because a shining surface emits more heat; and one layer of air cell asbestos gives a slight saving of heat loss.

I might mention that those advocating insulation use round duct work.

Personally, I am inclined to favor uninsulated square ducts because we do not have exceptionally cold weather here on the West Coast, not under 30 deg, and the homes are not insulated in the wall and attic spaces. On the other hand, if our homes were insulated, I believe that the duct work should be insulated also with three or more layers of air cell asbestos.

It would be of great assistance to have your opinion on duct insulation in this area.

California J. D. C.

To the Reader:

It is quite true that the surface on a radiator or pipe emits less heat when the surface is bright and shining than when it is rough and dull. It also is true that this holds no matter what is under the surface, insulation or metal.

This means that a radiator painted with aluminum bronze may have the heat emission reduced as much as 10 percent or more when compared with the unpainted surface, but when a coat of dull black paint is used to cover the aluminum paint the heat emission will be brought back to that of the bare iron, and possibly may even exceed it slightly.

Superficially, it would appear that bright pipes might well be left without covering, but as time passes, the surface through age and the collection of dust (and possibly through some corrosion) will lose its luster. It will then emit much more heat due to the dull surface than before.

We entirely agree with you, however, that if pipes are to be covered at all, they should be covered well. Little is gained by doing a superficial job of insulation, for in such a case nearly as much heat is lost and thus the material and time are largely wasted.

Whether or not an individual installation should be insulated would depend, we feel, upon the particular circumstances involved. But if the temperature drop of 30 deg which you mention is at all frequent, and if the runs of duct work exposed to this temperature are considerable, then high grade and complete insulation of the type which you suggest is definitely in order. On the other hand, a job in which such exposed runs have been kept to the minimum would probably not require insulation in your usually temperate climate.

"On-Again-off-Again" Pump

To the Editor:

I have a customer who wanted to boost the water pressure of his system to 50 or 55 lbs. He obtained the pump, tank and control switch from another source, and I connected the outfit as shown in my sketch (Fig. 3, "A" below.)

But as soon as the system started we had trouble. The pump starts, but before it has reached full speed the pressure switch cuts it off, and in 20 seconds to half a minute it starts again, going off then before coming to full speed.

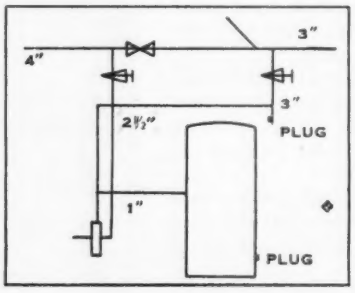
I claim that we have too much pump. The greatest possible demand—and this would be only momentary—would be 600 gpm. There are three 4-pocket 48-in. by 10-ft automatic wash wheels and one 48-in. by 7-ft non-automatic wash wheels.

I have recommended that a 3000 gal. tank be installed.

But it has been suggested by this other source that changes noted in sketch "B" be made, and it is claimed that this will correct the trouble with the pump.

I claim that the pressure in the lines will drop to the city water pressure before the water in the tank can bleed out of the 1-in. connection, activating the pressure switch; and the pump will over run when pumping because the water

(Please turn to top of page 116)



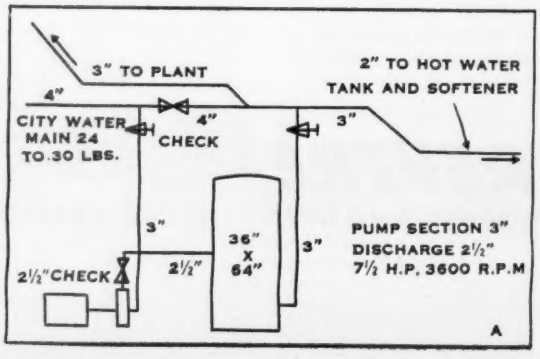


Fig. 3 (A): Shown at right is reader's installation in which pump cycle is too short. (B) Above is an alternate hookup which was suggested to him by another source.

How to build a Tile Shower with a lifetime leak proof floor

My customers like the slip proof sanitary qualities of the Fiat terrazzo receptor.

use a FIAT PRECAST TERRAZZO RECEPTOR

— and eliminate the troublesome lead pan.
— Save money — Save time — Reduce the danger of leaky cracks developing in tile walls and floor.

The Fiat one piece precast receptor is not affected by building settlement, it makes a much stronger floor than the old "multi-layer" construction of fill, lead pan, grout and tile. Make Fiat receptors standard on all tile shower jobs for your customers' satisfaction and your own protection.

STANDARD SIZES

Square type	Corner type
32" x 32"	36" x 36"
36" x 36"	40" x 40"
40" x 40"	

Available for prompt delivery. Many plumbing wholesalers carry Fiat receptors in stock.

FIAT

FIAT METAL MANUFACTURING COMPANY
Three Complete Plants (Chicago area plant) Franklin Park, Ill. • Long Island City 1, N. Y. • Los Angeles 33, Calif.
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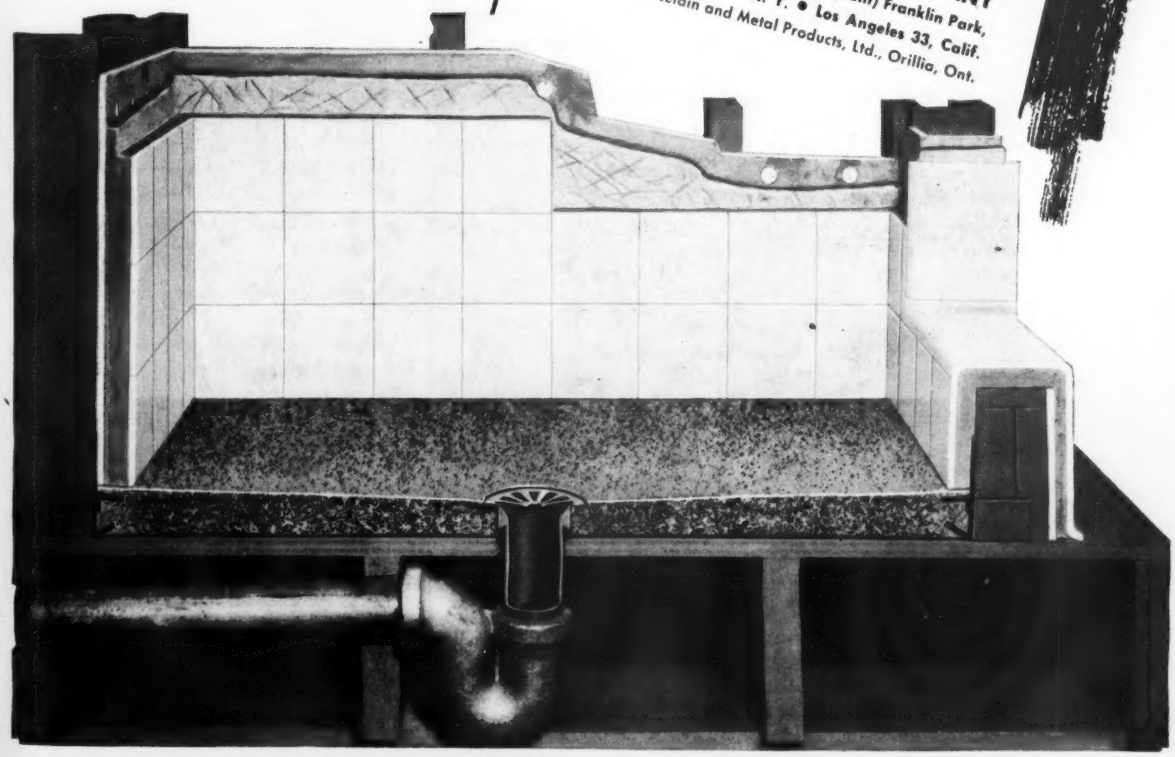


Questions and Answers

(Continued from page 114)

feeding into the tank through the 1-in. connection will take longer to affect the pressure switch.

Will you please give me your opinion, plus a sketch of a satisfactory hookup.

California J. D.

To the Reader:

Although we would require a considerable amount of additional information to offer a detailed solution to this problem, it appears that the hookup you have indicated in your drawing ("A", page 114) is acceptable *if*, as shown in our hookup (Fig. 4, below), you install a check valve on the cold water service. Also, it would be advisable to provide this job with an air compressor.

The pump starting and then stopping almost immediately may be caused by the lack of sufficient air in the tank. It may have become water-logged due to leakage of the air, or by the air being absorbed by the water.

We submitted your problem to an expert associated with a pump manufacturer, and his comments follow:

"The basic difficulty seems to be in the relationship between the pump capacity, tank size and water draw from the system, not in the piping connections, as indicated. If some idea of the maximum draw from the system and the pump capacity curve can be obtained, it will then be possible to evaluate this problem more precisely." *H. A. Lockhart, Chief Engineer, Bell & Gossett Company, Morton Grove, Illinois.*

Snapping Pipes

To the Editor:

During the past two years we have installed quite a number of steam systems without customer complaints, but with this one, of which I am writing, we have had some little difficulty.

The customer complains of a slight snapping of the pipes as they expand and contract. There is a quarter of an inch clearance around each pipe as it comes through the floor. There are swing joints on each riser in the system. And the main as well as the risers have the proper pitch. Every other detail is in perfect form for a job of this type, but the snapping sound persists.

We have checked and double checked this job, and we are certain that the sound is definitely not due to a water hammer. The system is oil fired. Could you suggest any method for correcting this annoying problem?

Rhode Island O. B. C.

To the Reader:

Assuming that your system is correctly designed and has no part of the piping in contact with the building construction, we believe that the noises reported by your customer during the heating up and cooling off of the system are probably caused by the pipe slipping on the hangers. This often occurs when the hangers are short and have insufficient swing to allow them to follow perfectly the movement of the pipe.

This can be overcome—or, at least, greatly reduced—by greasing the bottom of the pipe about an inch or so each side of the hanger support, so that the pipe will slide in the hanger more or less noiselessly.

Another method is to substitute vacuum type air valves which will keep a small amount of vapor forming off the boiler water for sometime after the oil burner has shut off—and this will keep the mains warm with a corresponding reduction in expansion and contraction between operations.

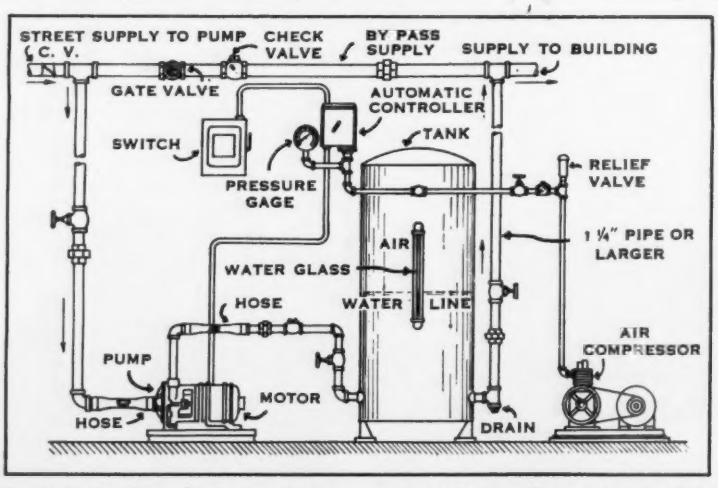


Fig. 4: In the above drawing we have an alternate hookup for reader "J.D." which will, we feel, correct his trouble with a pump which cuts off too quickly. A check valve on the cold water line has been added, along with an air compressor.

Control of Noise Level

To the Editor:

We have installed a year-round air conditioning system in a new office building. In so far as heating and cooling are concerned, we have had no complaints on the system's performance; however, some of the occupants of the various offices have objected to the noise of the fan. They claim that they hear a vibration in the walls and a humming (like that of a fan motor) near the outlet grilles.

We have used the conventional noise-dampening devices in the installation, so we do not know what else to do. Would you please advise us on all known methods of lowering noise levels in forced air systems.

Missouri A. L. C.

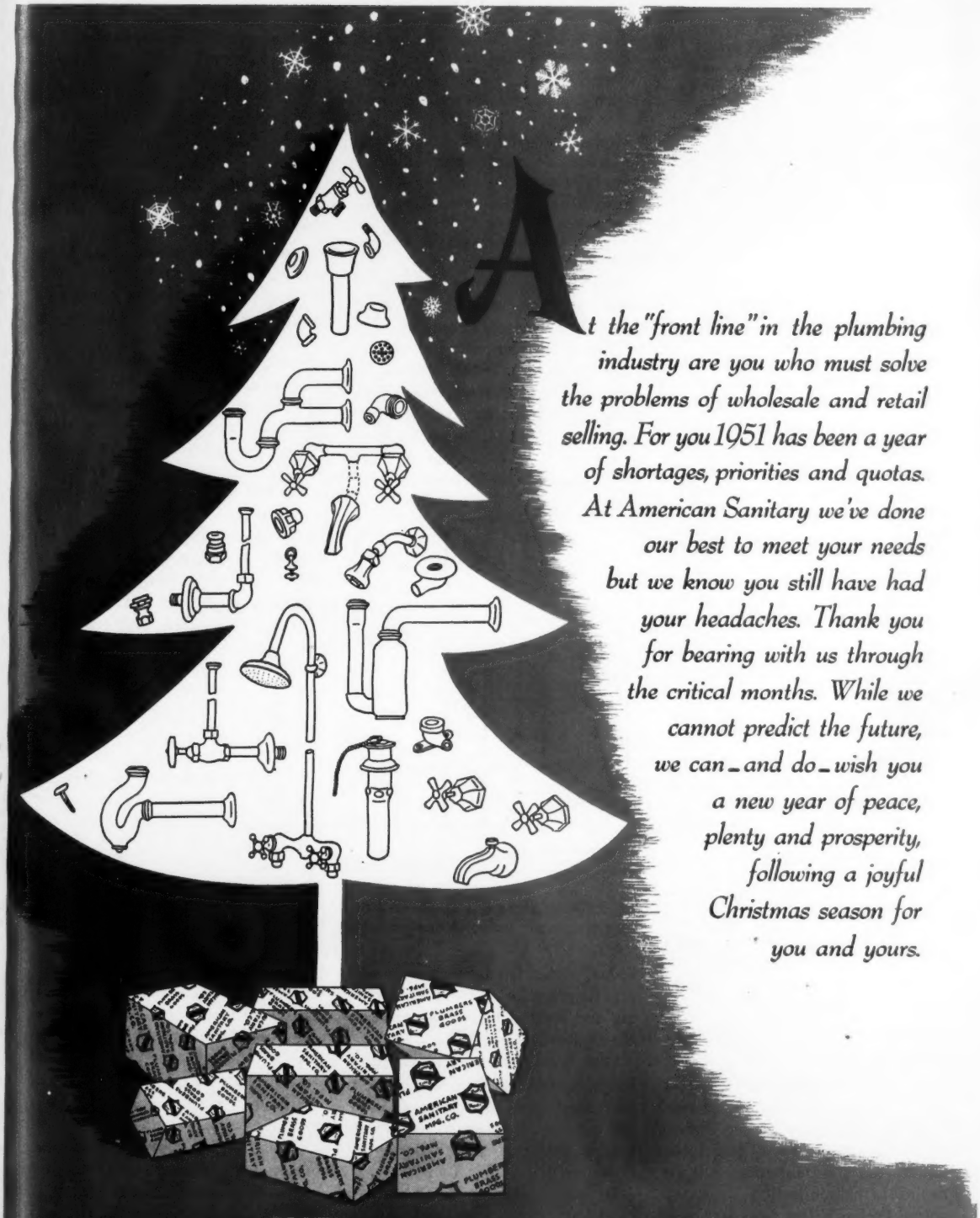
To the Reader:

Transmission of mechanical noises from either the fan or the motor through the duct system can be prevented, in most cases, by the use of either canvas or an asbestos cloth to connect the fan inlet and the fan outlet to the respective parts of the system.

Transmission of vibration noises through the building itself can be prevented by mounting the apparatus on pads of resilient material such as either rubber or cork.

In general, rotational or vortex noises from a fan will be at ac-

(Please turn to top of page 118)



At the "front line" in the plumbing industry are you who must solve the problems of wholesale and retail selling. For you 1951 has been a year of shortages, priorities and quotas. At American Sanitary we've done our best to meet your needs but we know you still have had your headaches. Thank you for bearing with us through the critical months. While we cannot predict the future, we can – and do – wish you a new year of peace, plenty and prosperity, following a joyful Christmas season for you and yours.

OVER FORTY YEARS' LEADERSHIP IN THE PLUMBING INDUSTRY

A·S AMERICAN SANITARY MFG. CO. ABINGDON, ILLINOIS

Questions and Answers

(Continued from page 116)

ceptable levels if a fan is selected which will operate at or near its maximum mechanical efficiency. Noises due to the flow of air through the system can be kept down to acceptable levels without the use of sound insulation by proportioning all ducts so that the velocity will not exceed 900 to 1200 fpm in main ducts or 600 to 1000 fpm in branches. Air velocity leaving registers or grilles should not exceed 200 to 400 fpm where quiet operation is required.

When practical consideration demands the use of a system which will produce a noise level that is above that permissible in the space to be conditioned, information on the use of sound absorbers should be sought. Any one of several manufacturers could be consulted.

We regret that we cannot be more specific; however, you have not informed us in detail of the means you have already employed to solve your problem. A rough sketch of your system would be helpful in this connection.

Other readers are invited to contribute their methods for solving the problem of noise levels in this type of installation. — Ed.

Hartford Loop Again

To the Editor:

We have been wondering if increasing or decreasing the length of the leg or seal of a Hartford Loop will have serious effects upon the system as a whole.

Illinois W. R. A.

To the Reader:

It might be well to review the fundamentals of the design and function of the Hartford or Underwriter's Loop. Used only with steam boilers (as it is neither needed nor desirable in connection with hot-water boilers), the loop is a protective device intended to prevent excessive water loss from the boiler.

A loss of steam pressure occurs in the supply mains as the steam flows away from the boiler. In closed-circuit systems the end of the steam main is connected through the return main to the boilers. Owing to the loss of steam pressure in the main the boiler pressure will cause the water level to stand higher in all drops to the return connections than the normal boiler water level.

Under bad conditions of operation a considerable amount of water may be forced out of the boiler through the return connections and thus lower the water level in the boiler to a point where damage to the boiler may occur.

The upper portion of the loop is attached by means of a close nipple to the equalizer connection between the boiler header and the return yoke. The nipple connection is placed so that the water level in the boiler cannot be lowered more than from 2 to 4 in. below the normal water line. When the top part of the close nipple is uncovered by

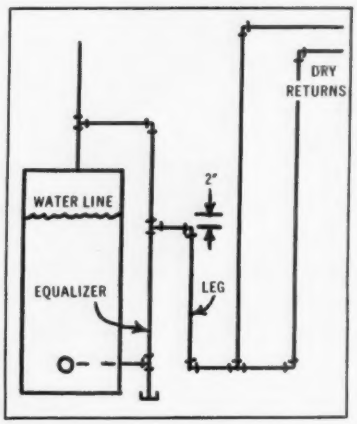


Fig. 5: Shown above is a schematic drawing of the proper hookup of Hartford Loop.

water, steam from the header exerts its pressure on the return piping and further loss of water from the boiler is prevented.

The Hartford or Underwriter's Loop cannot prevent water from being lost from a boiler by evaporation; its sole function is to prevent loss of boiler water by backward flow into the return mains.

In specific answer to our reader's question: the leg or seal can be increased or decreased in length without any serious effect. The point to watch is this: the leg must be connected to the equalizer *at least 2 in. below the water line of the boiler.* If a water heater or some other piping interferes, a six or eight inch long nipple can be used without difficulty. (Fig. 5, above.)

Electrolysis (?) in Domestic Water Systems

To the Editor:

In several housing projects we have worked on in this area the plumbing systems seem to be affected by electrolysis. The water pipes in some cases begin to leak in from one to two years after the completion of the work. To a much lesser degree, the same thing has occurred in private dwellings. No trouble in the iron water mains has yet developed, however.

Formerly, we did not have this trouble, and it seems to me that it must be one or a combination of the following: water, defective wiring (either house or power lines), telephone line grounded to water pipes. We do not have electric street cars in our city.

The water pipe system is of standard installation; that is, with copper pipe inside the building and galvanized pipe used in the ground outside. The galvanized underground pipes are the ones that are damaged, and in some instances the pipe fittings themselves have been attacked.

Is there a gage of some sort that could be used to test for electrolysis? This is a serious problem in this region and we would appreciate any advice that you can offer us.

Alabama C.D.B.

To the Reader:

We fear that the information with which you supplied us is not sufficient to enable us to offer you a precise explanation of your difficulty. Reference is made to plumbing systems with no indication as to the type of service. However, it is our assumption that the lines involved are water supply lines, and we have therefore based our deductions on this assumption.

Likewise, there is no indication as to whether the attack is on the interior or exterior of the line. If it is on the exterior, then the character of the water being carried would not be a factor; instead, if as you say it is underground pipe, then the fill used would be important.

It is significant, we feel, that the trouble is of recent origin. And that it was also noted to a much lesser degree in some private dwellings

(Please turn to top of page 197)

QUALITY YOUNGSTOWN SERVICE

SCRAPPY SAYS:
AID DEFENSE
MORE SCRAP TODAY...
MORE STEEL TOMORROW

THE iron and steel industry faces a serious scrap shortage, growing more critical every day. . . . It will be impossible for producers to make the steel tonnages demanded for rearmament and essential civilian needs, unless consumers cooperate by furnishing *more scrap*. . . Most desperately needed now is heavy industrial iron and steel scrap. . . . Keep the cobwebs from gathering at your own plant by turning in more of your own scrap today.

The Youngstown Sheet and Tube Company
General Offices--Youngstown 1, Ohio
Export Offices--500 Fifth Avenue, New York
MANUFACTURERS OF CARBON ALLOY AND YOLOY STEELS

The steel industry is using all its resources to produce more steel, but it needs your help and needs it now. Turn in your scrap, through your regular sources, at the earliest possible moment.

New Products

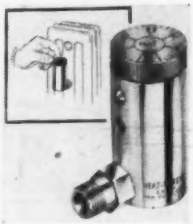
Manufacturers dealers . . .

Shallow Well Water System

The United Electric Company recently introduced a new jet system to the water pump field. Their new complete ¼ hp shallow well centrifugal jet system with a six-gallon tank comes ready for connection. The unit can be quickly converted for deep well operation, has large-volume capacity and can deliver 535 gal. per hour at 20 lbs. pressure.

Manufacturer: United Electric Co., 120 S. LaSalle St., Chicago 3.

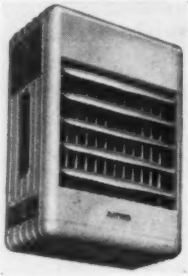
Radiator Valve



Room temperatures can be individually and automatically controlled through the use of Heat-Timer's new thermostatic radiator valve. As illustrated, a simple dial setting results in any desired room temperature. Through automatic control of radiator air venting, the unit reportedly speeds heat to colder rooms, saves heat waste on rooms already warm, and allows desired temperature variations from room to room. The valves feature temperature-sensitive phosphor bronze bellows and are applicable to any low pressure one-pipe steam system without interference or alteration with existing boiler controls.

Manufacturer: Heat-Timer Corp., 520 Broadway, New York 12.

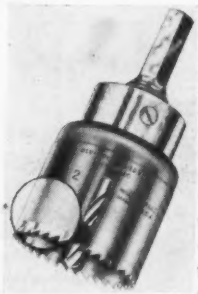
Gas-Fired Unit Heaters



Development of a new line of gas-fired unit heaters having new design features has been announced by Modine Manufacturing Company. A reduction in unit heater weight and bulk, faster response to thermostatic control, balanced heating performance and lengthened service life are aspects of the new design. Heat exchanger and burners are stainless steel for maximum resistance to rust and the acid action of corrosive gases. To reduce the lag in tube warm-up and permit much faster heat delivery on thermostatic demand, heat exchanger tubes are die-formed to provide their own individual combustion chambers. Featuring light weight and small size, Model 105 (shown here) has an input of 105,000 Btu per hr, weighs 106 lbs, and measures 30 in. high, 21¾ in. wide and 12½ in. deep. All models are equipped with built-in draft diverters, automatic safety controls, rust protected casing and built-in fan guards. Five sizes are available, ranging from 65,000 to 165,000 Btu per hr input.

Manufacturer: Modine Mfg. Co., Racine, Wis.

Line of Hole Saws

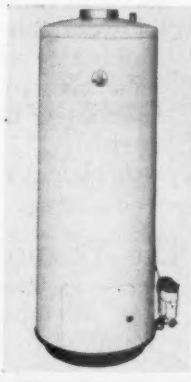


The Millers Falls Company has recently introduced a new line of high-speed, heavy-duty, follow-through type hole saws in sizes up to 4½ in. diameter.

Using a specially selected high-speed steel edge welded to an extremely tough alloy steel back, these gang cutting tools are said to be practically unbreakable in use and capable of fast, clean cutting of hard and mild steels, aluminum, brass and bronze, iron and steel pipes, etc. Holes to a depth of 1⅛ in. may be cut in solid stock through walls, sides of pipe or to desired depths in stacked material. Because the body of the saw is slightly smaller than the cutting diameter, the complete tool follows through the hole it cuts. Usable in portable power drills, radial drills, lathes, drill presses, etc., the complete line includes 40 saw sizes ranging from ⅝ to 4½ in., 3 sizes of driving mandrels equipped with ¼ in. high-speed pilot drills, and a 12 in. mandrel extension.

Manufacturer: Millers Falls Co., Greenfield, Mass.

Oil Burning Water Heater



The new Gillen Automatic oil burning water heater, featuring new styling, improved performance and better construction, was recently introduced by the manufacturer. Its new burner is said to offer low cost operation, cleaner, safer and more dependable operation on pilot fire, and a newly-designed screw-jack burner support for easier servicing. The water heaters are available in 30 and 50 gal. sizes and include streamlined styling with white lacquer finish and controls to match.

Manufacturer: J. L. Gillen Co., 204 E. High St., Dowagiac, Mich.

announce . . . new products to build business for better tools to increase efficiency for contractors

MERCHANDISING • FABRICATION • INSTALLATION

Steam Pipe Union

The Capitol Manufacturing & Supply Company announces the manufacture of a new steam pipe union. Made from seamless and forged steel, this union (300#) is for use with all piping applications, including hazardous liquids. The unit supplements the manufacturer's 250# union and is impregnated with an effective rust resistant. Both are supplied zinc coated, furnished with a brass to steel ground point seat, and, for merchandising, are cartoned in convenient quantities at no extra charge.

Manufacturer: The Capitol Manufacturing & Supply Co., 153 W. Fulton St., Columbus 16, Ohio.

Tank Cover

Designed to replace broken porcelain tank covers, a new plastic cover which features a ridge along its outer edge for holding toilet articles, has been announced. The unit reportedly will not warp when used over a cold water tank and will not chip or peal. The cover will fit tanks up to 21⅛ in. wide and up to 7¾ in. from front to back. The unit comes in five colors which are molded into the plastic of which it is made.

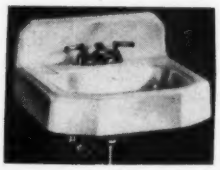
Manufacturer: Tybond Products Co., Chicago 47.

Portable Seat for Tots

The new Toddler Traveler, youngster's "toidy" seat, folds into a compact size for handy carrying on trips away from home. In its cosmetic-like case it weighs less than 8 ounces and is small enough to go into a handbag or coat pocket. The unit comes in chipproof blue or pink plastic, fits all standard fixtures, and can be easily washed clean with soap and water.

Manufacturer: Tennesse Eastman Div., Eastman Kodak Co., Kingsport, Tenn.

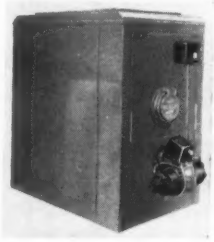
Shelf Lavatory Line



Kohler Company recently introduced a new size in its line of enameled cast iron shelf lavatories. Outstanding features of the restyled Hydson, available with or without overflow opening, are its modern lines and its availability in a 19 by 17 in. size which should prove ideal for smaller homes. The larger sizes, 20 by 18 in. and 22 by 19 in., in which this line has traditionally been offered, are being continued in production. All three sizes feature large, roomy basins, convenient soap dish, a 5 in. back designed to protect the wall against splashing and chromium-plated fittings.

Manufacturer: Kohler Co., Kohler, Wis.

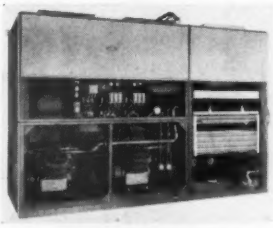
Line of Winter Air Conditioners



A new line of oil and gas fired winter air-conditioning units, for both up flow and horizontal flow installations, has recently been announced by the Majestic Company. This new series (called the 200) includes four sizes, ranging from 120,000 to 200,000 Btu capacities. They heat, filter, humidify and circulate warm air to every room. The blower and motor of the horizontal flow unit can be mounted at either side or at rear, to suit the basement arrangement. The manufacturer's up flow unit is designed for homes requiring up to 145,000 Btu capacities. The smallest of these units, Model UF-212, is 2 in. wide, 46 in. deep, and 83 in. high. Including the blower, the entire heating unit occupies only 10 sq ft of floor space. All models are encased in heavy gage steel, finished in blue baked enamel.

Manufacturer: The Majestic Co., Huntington, Ind.

Air Conditioner with 2 Refrigeration Circuits



Containing all the elements of a central station air conditioning plant in a single package, including an evaporative condenser, Refrigerated Kooler-Aire will be offered in a series of new models featuring two complete refrigeration circuits. The new dual circuit units, designated DRK, have been designed for economical operation at either full or half capacity, providing self-contained equipment suitable for installations which involve load variations and require true capacity control. Separate refrigeration circuits are arranged to provide effective dehumidification when operating at reduced capacity. Internal wiring provides for alternating the lead compressor to insure even wear, and a time delay relay prevents both compressors from starting simultaneously. The units are wired

(Please turn to top of page 123)

According to LAW

• Part Thirteen of a Series •

This continuing review of legal decisions will help plumbing, heating and air conditioning contractors avoid litigation . . .

All higher courts hold that failure of plumbing contractors to keep books *in detail* reduces their chances of winning all suits involving taxes. Therefore, failure of a contractor to separate labor and service costs on its books may result in the contractor having to pay a state's sales tax, plus penalties, on the *full* amount of money received on all installation, construction, and repair contracts.

For instance, it was shown a contractor's bookkeeper entered the total contract price of each job, including all labor services as part of the contract price. At the close of the month the total amount of contracts was entered, and one-half was specified as labor. This was done because by past experience the company's bookkeeper knew that approximately one-half the contract price was labor and service costs.

It is interesting to observe that the higher court ordered the contractor to pay the state's sales tax on the full amount of the contracts plus heavy penalties, although by law it would ordinarily be required to pay the sales tax on only the selling price of the material. The court said:

"The penalty was properly imposed and the decree imposing it is therefore affirmed."

Citation: Ferguson v. Cook, 220 S. W. (2d) 808.

WHEN DOES AN INSTALLATION CONTRACT TAKE EFFECT?

A recent interesting case showed that a contractor's installation contract begins to run the date it is finally *approved and accepted, not* the date it was signed.

A property owner and a contractor signed an agreement for installation of certain plumbing and heating equipment. According to the contract the installation was to begin within sixty days. The testimony showed that the contract was signed July 2 by the property owner, but was not signed and approved by the contractor until August 2. The contractor had not started installation on September 23, and the property owner wrote and cancelled the agreement.

In subsequent litigation the property owner contended that the contractor breached his contract by failing to start installation within 60 days after the contract was signed July 2.

The higher court held the contractor not liable because the contract was not approved until August 2, and that it was within the legal rights of the contractor to start installation within 60 days from August 2. The court said:

"The case turns on the effective date of the contract. The effective date was the date when the contract was approved by defendant, that is, August 2."

Citation: McCrea v. Automatic Heat, Inc., 55 Atl. (2d) 564.

YOU ARE RESPONSIBLE FOR HELP

According to a recent higher court, negligence of a plumbing contractor may be *presumed* to have caused a fire, if the testimony proves that his employees were smoking cigarettes just prior to the fire.

In one case, it was shown that a building was damaged by fire. The owner of the building sued the contractor and proved facts, as follows: The contractor's employees had stopped work at 5 o'clock and then the employees left. Not over 45 minutes thereafter it was discovered that the roof was ablaze.

The owner of the building proved that the contractor's employees had been smoking cigarettes while at work.

Although no direct proof was given that the contractor's employees set fire to the building, the higher court held the contractor liable to the building owner for $1,953 damages, saying:

"This contractor's employee smoked cigarettes continuously while working and did so the date of the fire. He lights them from matches. . . . It is certain that when this employee quit working

there was no blaze. But, it is not at all certain that when he ceased work there was not a butt of a burning cigarette or a lighted match, smoldering. . . ."
Citation: North River Co. v. H. H. Bain Co., 30 So. (2d) 139.

CONTRACT SHOULD INCLUDE REPOSSESSION CLAUSE

CAN A CONTRACTOR-DEALER repossess equipment installed on a job if the property owner fails to make agreed payments? According to a recent higher court decision he can do so only if the installation contract includes a specific clause stating that the contractor can repossess equipment if the property owner defaults.

Otherwise, the contractor will be held liable to the property owner if he takes back unpaid-for equipment.

For example, testimony in a recent case showed that a contractor installed heating and plumbing fixtures in a certain building. However, the contractor had neglected to include in his contract a clause that he would take possession of the equipment and materials if the property owner failed to make agreed payments. The owner did default and the contractor without consent of the owner removed the equipment and fixtures having a value of $900.

The court promptly held the contractor liable to the property owner for $1,050 damages.
Citation: Elder v. Sage, 42 N.W. (2d) 919.

WHEN IS A CONTRACT HELD VOID?

MODERN HIGHER COURTS consistently hold that no sale contract is valid unless both contracting parties definitely agree on the exact quantity, quality and price of merchandise being purchased.

For example, a seller wrote a plumbing contractor as follows: "This will confirm our sale to you of 600 tons of soil pipe and fittings to be delivered at the rate of 100 tons per month starting in January and to be completed during June. As quoted, the price on victory weight pipe, sizes 2" through 6" will be list price plus 23½% f.o.b. cars. The terms on this sale will be sight draft B-L attached payable at the Tyler State Bank and Trust Company."

The seller refused to ship the merchandise and the contractor sued for damages. The higher court held the contract indefinite and refused to award damages. In holding the contract void and unenforceable, the court said:

"The letter does not define what is meant by 'list price'. The letter does not grant to either of the litigants the option to select and determine the particular grades, sizes, or items to be delivered

(Please turn to center of page 185)

New Products

(Continued from bottom of page 121)

for use with a two-stage thermostat for normal operation. The dual circuit units will be offered in 15, 20, 25, 30, 40 and 50-ton capacities.

Manufacturer: United States Air Conditioning Corp., 3300 Como Ave. S. E., Minneapolis 14.

Stone-Lined Hot Water Tank

A stone-lined hot water storage tank that eliminates leaks due to rust and corrosion was recently announced by the Mor-Flo Heater Corporation. Designed for residential use, the new boiler is a 40-gal. seamless tank of heavy gage steel with a 33-gal. water capacity. Intended for use with standard side-arm heaters, it will deliver from 28 to 60 gal. of hot water per hour, depending upon heater size used. The interior of the tank is lined with a ½ in. composition stone lining.

Manufacturer: The Mor-Flo Heater Corp., 2175 E. 76th St., Cleveland 3.

Magnesium Rods for Local Water

A scientific and versatile magnesium rod recently announced by the S. H. Leggitt Company is designed to meet varying water conditions in different parts of the country. Whether the water in a community is especially corrosive, average or below average, there is a rod designed to withstand the corrosive properties of that water. These magnesium rods stop rust and corrosion in water heaters and range boilers, lengthen the life of new water heaters and give added life to old water heaters. They are made of magnesium and jointed for installation without need for dismantling the water heater.

Manufacturer: S. H. Leggitt Co., 235 High St., Marshall, Mich.

Forced Warm Air Furnace Line

The addition of three gas-fired and two oil-fired forced warm air furnaces for use with Blend-Air or conventional duct systems was recently announced by the Coleman Company. The new gas models have input ratings of 125,000, 100,000, and 75,000 Btu; output ratings of the new oil-fired models are 80,000 and 100,000 Btu. Gun-type burners incorporated in the new oil models are designed for quiet, safe, economical operation. The unit operates at 100 lbs pressure and is adjustable for CS 12-48 No. 1 or No. 2 oils. Casings for all models are rigid and airtight and are finished in hammerloid tan baked enamel. The largest of the furnaces occupies less than six sq ft of floor space and is less than five ft high.

Manufacturer: The Coleman Co., Inc., St. Francis & Second Sts., Wichita, Kan.

(New Products continued on page 152)

Plumbing Problem!

Self-Siphonage of Fixture Traps

• Part 2 of a Series •

THE function of the water seal in fixture traps is, as is commonly known, to prevent sewer gases from entering the dwelling in objectionable amounts, and any reduction in trap seal due to self-siphonage may impair the ability of the trap to perform its function properly. This article, the second of a series, continues the investigation of this important plumbing problem.

Fig. 1, A, illustrates the situation that exists when the trap is filled to its normal level; that is, to the level of the crest of the trap weir with the air pressure the same above the water level in both legs of the trap. It is assumed that there is no flow from the fixture to which the trap is attached.

Now if pressure fluctuations in the drain lead to a momentary or persisting pressure excess in the drain over the atmospheric pressure existing in the down pipe, then we shall have the situation shown in Fig. 1, B. The water level will fall in the outlet leg and rise in the inlet leg of the trap until equilibrium has been attained.

The following relation exists between the difference in water levels thus produced and the excess pressure in the fixture drain:

$$\Delta p = pg\Delta h,$$

where

p the density of the water in the trap,
Δp the excess pressure in the drain,
g the acceleration of gravity,
Δh the difference in water levels in the two legs of the trap.

Now, if the pressures on the two sides of the water seal equalize, there will be no loss from the trap (except possibly a small loss due to the over-shooting of the column of water due to its inertia, particularly if the pressure changes suddenly), see Fig. 1, C.

In an actual system, however, the pressure in the drain will fluctuate above and below the atmospheric pressure in the down pipe, so that sometimes there will be a pressure reduction in the drain. Under

(Please turn to top of page 126)

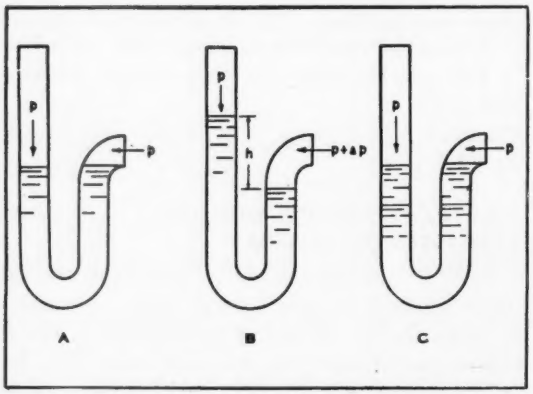


Fig. 1: The three sketches shown above illustrate how pressure fluctuations in the drain are compensated for in the trap weir.

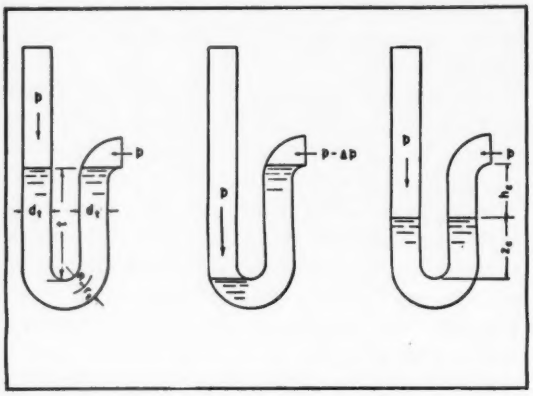


Fig. 2: Above are shown the three basic steps of self-siphonage: persisting pressure, overflow of trap weir, loss of seal.

Fig. 3: Cross section of a typical drain showing how one or more plugs of entrained air form during the flow from a fixture.

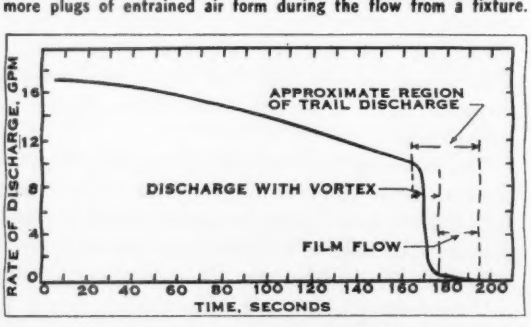


Fig. 4: Shown above is a chart illustrating the characteristics of the discharge curve for a bathtub (flat-bottomed). The initial water level was 10 inches. The beginning of the sharp fall is marked by formation of a vortex which persists until tub empties.

And in Denver – A FUTURE OF FAULTLESS SERVICE

MANUAL TRAINING
HIGH SCHOOL
DENVER, COLORADO

RAYMOND HARRY ERVIN
architect

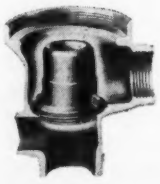
ROBERT BERNE & ROBERT D. LARAMEY
assoc. architects

MARSHALL & JOHNSON
mechanical engineers

DENVER PLUMBING & HEATING COMPANY
plumbing contractor

CRANE-O'FALLON COMPANY
wholesale distributor

Among the largest schools ever to grace the "Mile High City" will be this strikingly conceived contemporary high school. Covering two city blocks, the plan emphasizes a clean cut progressiveness that defies early obsolescence. Understandably, it is only fitting that COYNE & DELANY diaphragm type FLUSH VALVES should have been specified and insisted upon. Here, as in so many of the nation's finest schools, DELANY VALVES will serve with distinction under the bruising traffic that only a school can provide.



The DELANY VALVE is the ONLY diaphragm type flush valve providing a renewable main valve seat, as shown at left. This feature, a basic requisite demanded in all other type valves, is just one of many contributing to the rapidly expanding prominence of DELANY VALVES. It guarantees that the flush valve will serve throughout the life of the building even should seat pitting or high pressure wire cutting occur.

DELANY *Flush* **VALVES**

COYNE & DELANY CO. • 834 KENT AVE. • BROOKLYN, NEW YORK

Since 1879

Self-Siphonage of Fixture Traps

(Continued from bottom of preceding page)

these conditions the water level in the inlet leg of the trap will be pulled down below the level of the trap weir, possibly as far as is shown in Fig. 2, B, while water will flow out of the outlet leg over the trap weir and will thus be lost. If a succession of such pressure reductions takes place, the losses will, of course, not be additive, but will correspond to the largest pressure reduction that has occurred.

Fig. 2, B, shows the condition that exists when the pressure reduction in the drain is just sufficient to pull the water level in the inlet leg of the trap down to the level of the dip of the trap, but obviously the pressure reduction may be only sufficient to pull the water level in the inlet leg down to some intermediate position, or it may be so great that air will be sucked through the water seal at the bottom of the trap.

The case shown in Fig. 2, B, is a special one that will receive consideration later.

After a pressure reduction in the drain, when the water levels in the two legs of the trap again equalize, the condition will be as shown in Fig. 2, C. The magnitude of the loss thus produced, whether it be caused by the discharge of other fixtures or by the discharge of the fixture on this drain (i.e., from self-siphonage), should not be permitted to exceed a certain amount, which may be different for different traps, if we are to prevent the passage of sewer gas

"I wish I knew what I got out of this—the boss is sure to ask."

in objectionable quantities back through the trap into the building under conditions of fluctuating pressures in the drain.

Once a particular trap-seal loss, or a particular remaining depth of trap seal, has become generally accepted as the maximum or minimum that should be permitted, then the system should be designed so that this loss will not be exceeded under any but very infrequently occurring circumstances.

Building drainage systems are ordinarily designed so that pneumatic pressure fluctuations in the fixture drains will not exceed about 1 inch head of water. Obviously, if there is a one-half inch depth of water in the trap, measured upward from the dip of the trap, the trap seal will just be adequate to prevent sewer gas from being forced back through the seal into the down pipe and thence into the building when the air pressure in the drain is 1-inch head of water above atmospheric pressure.

If the trap seal is reduced so greatly that an air passage exists below the dip of the trap, then gases in the drainage system can pass back freely into the building whenever pressures in excess of atmospheric pressure exist in the drain.

In the self-siphonage process there are two ways in which the trap seal may be replenished after the discharge of the fixture connected to the trap in question has ceased. These consist of the refill of the trap by the trail discharge of the fixture and the refill of the trap by water flowing back from the fixture drain into the trap.

At first thought, it might seem that the flow taking place through a trap ordinarily consists of water only. However, this is not the case, as has already been pointed out (see last month's article). In most instances air is carried with the water also. This phenomenon has been observed in a transparent trap and fixture drain connected to a lavatory, and these observations indicated that air entered the trap in three ways.

First, air was entrained by the water as it passed the overflow outlet just below the lavatory, and this air was carried through the trap in the form of bubbles.

Second, as the water surface in the lavatory continued to recede, a vortex formed in the lavatory, and in this way additional air was carried through the trap into the drain with the water.

Third, near the end of the discharge of the lavatory, with its attendent rapid decrease in the rate of flow through the lavatory outlet orifice, water was flowing out of the trap more rapidly than it entered, owing primarily to the inertia of the water in the trap and drain.

Hence the water surface in the inlet leg of the trap receded to such an extent that in many instances air bubbled past the dip of the trap and entered the outlet leg of the trap. This latter manner in which air enters or passes through a trap is especially noticeable when a large pressure reduction occurs in the fixture drain near the end of the discharge period.

Now if the rate of flow in the drain and the diameter of the drain are not sufficient to close off the passageway in the inlet branch of the stack fitting, this air can pass off to the vent or stack and exerts no particular effect on the nature of the flow in the drain.

However, if the flow is sufficiently great to close off the passageway just referred to, then the air in the drain becomes trapped between the solid mass of water in the vent fitting and the water in the trap and causes changes in the nature of the flow in the drain. This in turn affects the pressures in the drain and

(Please turn to center of page 197)

AUTOMATIC HEAT *and* AIR CONDITIONING *Section*

HE SELLS . . . Oil Burner Insurance

"We sell service," says New Jersey heating contractor W. C. Davis, "and service sells for us." Here's how the Davis contract plan is promoted

KEEPING in close contact with the customer," says W. C. Davis of Haddon Heights, N. J., "is one of the best ways to promote additional sales. And our new Oil Burner Insurance Plan makes this contact easy and natural."

This is an insurance plan that works two ways: first of all, it insures the customer against heatless nights by guaranteeing complete, 24 hour-a-day service for his oil burner; and it gives the domestic engineering dealer additional entree to the home while at the same time building goodwill and increasing service profits.

Mr. Davis offers four service plans from which his customers can make a selection. The first plan includes cleaning the boiler or furnace and the chimney at the start of the heating season and giving constant service for the remainder of the season at a cost of $18.00. All parts and labor are charged additionally.

This domestic engineering dealer also has fuel oil accounts, and to this type of customer a $10.00 seasonal plan is offered. This includes cleaning and servicing the oil burner and controls, vacuum cleaning the boiler and smoke-pipe and a continued free *(Please turn to page 129)*

$20.00 Certificate $20.00

OIL BURNER INSURANCE PLAN

TELEPHONE LINCOLN 7-4750 — W. C. DAVIS, INC. — PLUMBING HEATING

605 STATION AVENUE - HADDON HEIGHTS, N. J.

This Certificate Entitles

of to

- Servicing and Cleaning Oil Burner
- Servicing and Cleaning Controls
- Vacuum Cleaning Heater or Boiler
- Vacuum Cleaning Smoke-Pipe
- Vacuum Cleaning Base of Chimney
- One Year Free Service
- Replacement of Oil Burner Parts and Controls as Needed
- Automatic Gulf Fuel Oil Deliveries

Season

W. C. DAVIS, Inc.,

by

OIL BURNER SUBJECT TO INSPECTION BY CORPORATION

At right is the certificate issued to Oil Burner Insurance Plan customers. Printed on high-quality bond, it impresses prospects as an important document, which focuses attention on the value of the plan.

..two entries

for every

transaction..

"I have found it helpful to keep constantly in mind that there are really two entries to be made for every transaction—one in terms of immediate dollars and cents, the other in terms of goodwill."

Ralph Hitz

the standard of the industry...

ABC OIL BURNERS

AUTOMATIC BURNER CORPORATION

1823 Carroll Avenue • Chicago 12, Illinois

How W. C. Davis Promotes Oil Burner Insurance To the People Around Haddon Heights, N. J.

(Continued from center of page 127)

service for the remainder of the season. (If the chimney is cleaned from the top of the roof, there is an additional $4.50 charge to this plan.)

Plan number three permits the customer to select any portion or all of the following: (1) service and clean oil burner and controls on an hourly basis of $3.50; (2) vacuum clean heater at $6.50; and (3) clean chimney at $4.50.

The oil burner insurance policy, sold for $20, constitutes plan number four, and is offered to customers installing new oil heating equipment or to those customers whose heating plants have been checked thoroughly (another free service) and found in good condition.

This plan includes the following: (1) servicing and cleaning of the oil burner; (2) servicing and cleaning of controls; (3) vacuum cleaning heater or boiler; 4) vacuum cleaning smoke pipe; (5) vacuum cleaning base of chimney; (6) one year free service; (7) replacement of oil burner parts and controls as needed; (8) automatic fuel oil deliveries.

The insurance plan is outlined on a certificate type of paper (see page 127) printed to resemble a valuable document. This is an added promotional touch which tends to emphasize the value of the plan.

Obviously, with a liberal plan of this sort it is essential that each prospect's heating plant be carefully checked, for with faulty equipment the dealer could easily stand to lose a considerable amount

(Please turn to center of page 189)

W. C. DAVIS, INC.
PLUMBING AND HEATING
Delco Oil Burner Service and Installation

GENERAL ELECTRIC

CHAMBERS GAS RANGES :: G. E. REFRIGERATORS :: KITCHEN UNITS :: GULF FUEL OIL

Telephone
Lincoln 7-4750

605 Station Ave.
Haddon Heights, N. J.

OIL BURNER INSURANCE PLAN

We are inaugurating a new OIL BURNER INSURANCE PLAN. We feel that this OIL BURNER INSURANCE PLAN represents the most complete and economical insurance to be offered to the owners of automatic oil heat.

This is a Complete Oil Burner Coverage Plan, as follows:

1. Servicing and Cleaning Oil Burner.
2. Servicing and Cleaning Controls.
3. Vacuum Cleaning Heater or Boiler.
4. Vacuum Cleaning Smoke-pipe.
5. Vacuum Cleaning Base of Chimney.
6. One Year Free Service.
7. Replacement of Oil Burner Parts and Controls as needed.
8. Automatic GULF FUEL OIL Deliveries.

This OIL BURNER INSURANCE PLAN is being offered for the 1951-1952 Heating Season complete for the sum of $20.00.

We are enclosing a business reply card for your convenience. Your signature will be your acceptance for the OIL BURNER INSURANCE PLAN and a Certificate will be forwarded to you.

Very truly yours,

W. C. Davis, Inc.

THE PLAN IS PROMOTED by direct mail and word of mouth by satisfied customers. The letter shown above is sent to a carefully selected list of prospects. Each service call is considered as an opportunity to please the customer and to make a sale.

.....195.....

Dear Sirs:

Please enroll my Oil Burner under your OIL BURNER INSURANCE PLAN for the coming heating season.

Signature.....

Address.....

.....

CUSTOMERS ARE URGED to respond quickly to the service offer by mailing the post card (above) which is enclosed with the sales letter. Contacts with the customer made possible by the Insurance Plan often lead to additional sales of appliances, etc.

Selected Short Subjects

• *MONTHLY NEWS FEATURE* •

OF INTEREST TO HEATING MEN

I-B-R Heating Schools . . .

A NUMBER OF CHANGES in the schedule of the I-B-R School of Modern Heating were recently announced by The Institute of Boiler and Radiator Manufacturers.

The school originally scheduled in Boston from Dec. 18 to 20 has been moved into 1952. It is now scheduled for Jan. 15 to 17, and will be held in the Boston Consolidated Gas Company Building.

A corrected list of schools and dates for the rest of 1951 and the first six months of 1952 follows:

December 5-7, New Bedford, Mass., Moose Home.
December 11-13, Trenton, N.J.
January 8-10, Bridgeport, Conn.
January 15-17, Boston, Boston Consolidated Gas Company Building.
January 22-24, Hempstead, L.I., N. Y.
January 29-31, Brooklyn, N.Y.; February 5-7—Williamsport, Pa.; February 13-15—Buffalo, N.Y.; February 18-20—Cleveland; February 26-28—Chicago.
March 4-6—Milwaukee; March 11-13—Des Moines; March 18-20—Indianapolis; March 25-27—Louisville.
April 1-3—Richmond, Va.; April 16-18—Baltimore, Md.; April 22-24—Greensboro, N. C.; April 29-May 1—Charlotte, N. C.
May 6-8—Birmingham, Ala.; May 13-15—Jacksonville, Fla.; May 19-21—Atlanta, Ga.; May 26-28—Pittsburgh.
June 3-5—Rochester, N.Y.; June 10-12—Binghamton, N.Y.; June 17-19—Newark, N.J.; June 24-26—Hartford, Conn.

The I-B-R School of Modern Heating is a practical, three-day course which provides instruction in the design and installation of hot water and steam heating systems. The course includes lessons on panel heating systems as well as radiator and baseboard installations.

Tuition for the three days is $23. Contractors wishing further information may obtain it from The Institute of Boiler and Radiator Manufacturers, 60 East 42nd Street, New York 17.

ASHVE Research

A WELL-ROUNDED PICTURE of ASHVE research was presented to executives and society members who attended the open house at the research laboratory of The American Society of Heating and Ventilating Engineers in Cleveland, on the occasion of the inauguration of the society's new environment laboratory, Nov. 1-2.

In addition to the new laboratory, built for the study of human comfort in heated and cooled indoor spaces and the development of needed data for the design and installation of panel heating and cooling systems (see details, page 102), those attending inspected the partially-completed rooms which will be used for an intensive study of the little known subject of odors; the U.S. Navy Calorimeter which is all but completed, and numerous exhibits about reserarch pro-

Provide Protection For Insulated Lines . . .

BECAUSE no insulating material can withsand repeated mechanical abuse, special protection should be provided at points where insulation may be subjected to more than ordinary wear and tear (see photo).

Due to the layout of lines or equipment, as when lines are located at floor level near stairways, ramps or platforms, it may be impossible to prevent battering of insulated surfaces. Sometimes chains hanging from overhead chain hoists strike repeatedly against insulated lines or equipment.

Insulation that is exposed to such mechanical abuse may be protected by means of a sheet metal jacket which will cover the entire area of possible damage. The jacket may be tack-welded, or held in place with screws or bolts.

Where required, expansion joints with spring-loaded bolts may be provided in the jacket to compensate for circumferential expansion. Longitudinal expansion is permitted by lap seams at intervals of approximately 12 ft.

jects now under way at the research laboratory and at cooperating institutions throughout the country.

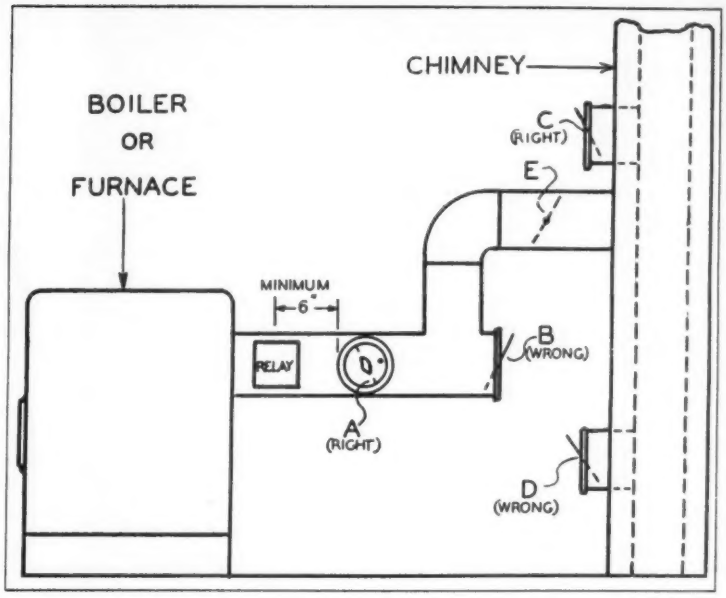
Other displays outlined the ASHVE's current and long range research programs and the fields of activity of the society's 18 technical advisory committees.

More than 140 excutives in the heating, ventilating and air conditioning field were guests of the society at the president's reception and a luncheon on Nov. 1. Lauren E. Seeley, ASHVE head, greeted the guests who were also welcomed by I. W. Cotton, chairman of the society's Committee on Research. Cloud Wampler, president of Carrier Corp., Syracuse, addressed the luncheon. Chartered buses took the guests to the laboratory after the luncheon.

In his address, Mr. Wampler predicted that more than 1,600,000 American homes would have partial or complete air conditioning within the next five years. Taking the 57-year span of ASHVE as a measuring rod, Mr. Wampler declared that the heating and air conditioning industry had come a long way in "a short time." He saw no room for "smugness", however, pointing out that "actually, we have not advanced as far as we should have during the period."

He estimated that the air conditioning and refrigeration segment of the industry alone was spending nearly $10 million annually on research. Declaring that the bulk of this was allocated to product and process development by individual companies, Mr. Wampler urged that much more money be devoted to fundamental research that would be of value to the entire industry. The new facilities of the ASHVE, he said, are a challenge to a great industry.

During a morning session at the Hotel Statler on Nov. 2, members of the society were addressed by Mr. Seeley; Mr. Cotton; Peter B. Gordon, chairman of the Technical Advisory Committee on Panel Heating and Cooling; Charles S. Leopold, chairman of the TAC on Sensations of Comfort, and Cyril Tasker, director of research for the society.



A Short Course in Draft Control Location

IT IS ALWAYS BEST to locate the draft control in the smoke pipe as near the boiler or furnace as possible. This is shown at point "A".

The draft control should be located at least a minimum of six inches beyond the relay towards the chimney. If located any closer than this, cool air coming in through the draft control will affect the helix of the relay and upset its normal operation.

Position "B" is not a good place to install a draft control. Regulation will not be accurate and it will collect dirt and soot.

If for any reason the draft control cannot be installed in the smoke pipe, it can be installed in the chimney. In such cases it must be installed, for proper results, above the entrance of the smoke pipe, as shown in "C". The draft control should never be installed below the smoke pipe inlet to the chimney as shown in "D". The draft control is calibrated and built to regulate draft properly when the hot gases are passing by it at right angles to the tee of the draft control. In position "D" no gases will pass by the draft control and it will not function properly.

At "E" a hand damper is shown. If drafts are abnormally strong, a hand damper can be used to supplement the draft control, but it is important that the hand damper always be on the chimney side of the draft control. If used it should be wired to a partially open position so that it cannot be accidently closed. If the draft control is placed in the chimney, no hand damper is necessary in the smoke pipe. Where drafts are abnormally strong, beyond, the capacity of one control, it is recommended that two controls be installed. *(Drawing through courtesy of Boston Machine Works Company, Lynn, Mass.)*

Air Conditioning Job

A METHOD of air-conditioning which utilizes the best features of several systems, and which may influence future air-conditioning design for commercial buildings, is being installed in the new 32-story Chrysler Building East, companion structure to the original 77-story Chrysler Building in New York.

Much interest in the new method of air-conditioning has been stimulated because it is ideally suited for all size buildings, although the 20 to 40 story height is rapidly gaining acceptance in the building industry as the most economical range for commercial office structures.

The engineering firm of Guy B.

(Please turn to top of page 133)

"What's THAT on the Christmas tree?"

My wife had every reason to question my sanity. Looked like I had suddenly gone loco!

But *I* had a point. Or thought so. Sure, it was partly a gag, but here it was Christmas, and I was pretty happy . . . with myself *and* with the world!

Why? Well, the true happiness of Christmas comes from being grateful. And I *know* why I am. First, for my wife and family, of course.

But I'm also mighty glad to be in the heating business. I don't know of any other I'd rather be in. I love the work and I can see tremendous opportunities all around me.

As a result of these opportunities, I've had a pretty good year . . . made some extra money . . . and think I can make even more next year.

The people I deal with are wonderful, too. Not only my customers – but the boys from the suppliers, as well. They're all good fellows, and always ready to cooperate when I have a problem.

I like the products I sell, too. My trademark is quality. In controls I always specify Honeywell, for they have a reputation for quality that adds to mine. And they've got such a complete line I can use their controls for any job that comes up.

Now do you see why I hung a Chronotherm on the tree? To me it symbolizes many of the things that have made me happy. And I know that in their own special way Honeywell controls have helped to make this one of the finest Christmases ever!

MINNEAPOLIS **Honeywell**

First in Controls

(Continued from bottom of page 131)

Panero, the designers of the Chrysler Building East's air-conditioning system, points out that the newness lies in their combining and applying three well-known air-conditioning procedures.

The combination of these methods was found to be a more economical way of bringing conditioned air to all areas than any one of the methods used singly. Moreover, the design provides a flexible way of treating the concourse and first floor area, thereby increasing the amount of desirable space which may be rented.

The three systems used are all planned to maintain 80F and 50 percent relative humidity. During the heating season a temperature of 72F will be maintained.

The first system combines heating and cooling and is designed to take care of all perimeter space (approximately 16 ft back from the outside wall) from the second through the 32nd floor. This system will employ window type air-handling units supplied from a central source.

The second system will consist of conventional metal ducts distributing conditioned air to all interior space from the second through the 32nd floor.

The third system covers the rentable space in the concourse and first floor. Outside air duct-work and chilled water piping to the fan rooms will be installed, and conventional air handling systems for the various stores and other spaces will be added.

More than 1400 tons of refrigeration will be required to cool air for the more than 420,000 sq ft of floor area in the building.

For conventional air-conditioning systems, the outside air quantities are based, of course, on a minimum of 25 percent of the total air handled. For interior systems during the intermediate seasons half the air handled will be outside air. The outside air intakes for the future systems on the concourse and first floor have been designed to handle up to 100 percent outside air during the intermediate seasons.

Dividing the air-conditioning into three parts is a logical way of meeting the problem, because each space requires a separate solution. The window units, equipped with individual fans, provide individual control for the outside rooms—where it is most needed. Another advantage is that duct sizes can be reduced by more than half, since the capacity required is only that for outside air.

The interior areas, relatively unaffected by sun or orientation, can be handled best and most economically by a separate conventional duct system.

The heart of the system for conditioning peripheral spaces will be individual units. One complete unit will be placed under each window, but a single cabinet will cover the entire space between columns, thus housing two units. Each unit will be equipped with an automatic valve so that it may be individually controlled if necessary. In large offices, however, one thermostat may control two to four units.

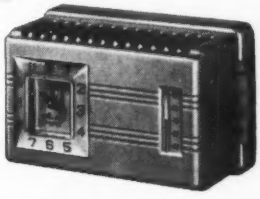
Special care was taken to eliminate all noise and vibration from the air-conditioning system. Flexible hose will be installed at pump suctions and discharges, and vibration isolators will be put under machines with moving parts.

Let the big modernization market help fill your stocking in '52!

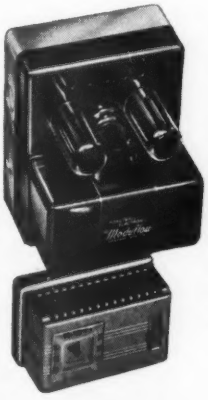
Promote Up-to-Date Honeywell Controls Like These During the Coming Year

Honeywell's famous Chronotherm, plus the new Electronic Moduflow package, give you a terrific one-two punch for going after a modernization market that will be *even bigger* in '52!

Honeywell Chronotherm



The Honeywell Chronotherm is the most sensitive, most accurate thermostat ever built! It *automatically* lowers temperature at night, raises it in the morning, so your customers get up in a nice warm house. And it saves fuel, too. These features offer you a mighty important "modernization" opportunity . . . because a recent survey showed 3 out of 4 people with thermostats raise and lower the settings every day—*by hand.* These people are your Chronotherm market!



Honeywell Electronic Moduflow "Package"

This outdoor and indoor thermostat system gives your customers the finest comfort, even in the most changeable weather. It compensates for temperature changes outdoors, load shifts indoors, and structural heat loss. It's up to 100 times more sensitive than conventional systems . . . and it's ideal for complete modernization jobs!

For illustrated literature explaining the above products in detail, write today to Minneapolis-Honeywell, Dept. DE-12-228, Minneapolis 8, Minnesota.

MINNEAPOLIS **Honeywell**

First in Controls

Heating contractors never had it SO GOOD!

Are you making full use of the many sales, engineering and product advantages available to heating contractors? If not, you'll find some worthwhile ideas in this article

TODAY, the heating contractor enters the battle for the consumer dollar better armed than ever before. It is true that this battle is hectic and brutal, but the entire industry has united behind the contractor, furnishing him with a splendid assortment of "arms" designed to help him meet and *defeat* this competition.

For one thing, product improvements by manufacturers have made it possible for the heating contractor to compete on an equal basis with "glamour" items such as automobiles, etc. No longer is his product something to be hidden quietly in the basement.

Some of these improvements, too, have so increased the efficiency of his products that he is enabled to point to lowered heating costs in a period of inflation . . . certainly, an excellent selling point.

And much of this selling "ammunition" is supplied by the manufacturer in the form of sales aids.

Ideas can be practical, and some of the new ones, developed in research laboratories and taught in industry-wide schools, are making it possible for the heating contractor to do a better job, easier, and for less. New methods of heating have been developed in recent years—notably, radiant panel and perimeter warm air—and these "glamour" methods are taught in the schools.

But the heating contractor need not leave home to reap the benefits of these newly developed methods and improvements. Information on the most recent strides of the industry are readily available to him in the form of manuals furnished by several of the industry's organizations. Covered too in these manuals are the conclusions of various prominent committees assigned to the job of appraising and solving specific problems in the field. Thus, more and more, the typical heating contractor can easily place himself in the vanguard of experts by utilizing this readily accessible modern thinking.

In general, it can be said without exaggeration that the heating contractor now has in his store products more salesworthy, more easily promoted than ever before. He has, too, a type of industry support that, if fully utilized, can only mean a better selling job for him.

In many cases these benefits accrue to the heating contractor without any additional action on his part. The new and improved products need only be ordered, and many ideas and sales aids are sent without request. However, some of these arms must be "requisitioned"; and it is interesting to note how many of the nation's most successful domestic engineering dealers have better equipped themselves.

Success in any field is largely a matter of taking adequate advantage of the opportunities offered. The heating industry is no exception, and the opportunities are better and more easily turned to advantage than ever before. The reader should check the aids he is now making use of with those which follow on these pages.

Short Courses Help Contractors Trim Costs; Improve Installations . . .

WITH AN OVERALL OBJECTIVE of better systems at lower cost, associations in our industry are sponsoring a series of short-courses in heating for contractors during 1952.

Much of the activity has been concentrated in the Institute of Boiler and Radiator Manufacturer's School of Modern Heating which, since its launching in April of 1950, has brought the latest information on the design and installation of hot water and steam heating systems to more than 3,200 contractors in 63 cities.

(Please turn to center of page 136)

Typical of the short courses sponsored by the I-B-R was this recent three-day session for heating contractors at Springfield, Mass.

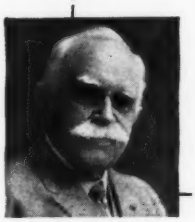
Commemorating our 60th Anniversary

THE POWERS REGULATOR COMPANY

New Factory and General Office Building: **3400 Oakton Street, Skokie, Illinois**

World's Most Modern Factory Producing Automatic Temperature and Humidity Control

. . . to meet the greatly increased demand for POWERS products and to give you better controls, better deliveries and better values . . . these advantages are possible with our large new plant and modern production facilities. With an enlarged engineering and production staff, plus 60 years experience in heating, ventilating, air conditioning and process control, we believe we can be of greater service than ever before to our many friends who have contributed to our success.



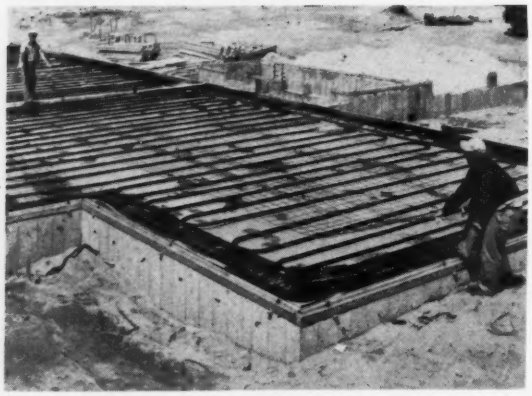
WILLIAM PENN POWERS
. . . with his invention of the first all pneumatic system of temperature control and gradual acting vapor disc thermostat made an invaluable contribution to the modern science of heating, air conditioning and industrial process control.

POWERS CONTROL — TEMPERATURE AND HUMIDITY — 60th ANNIVERSARY 1891 1951

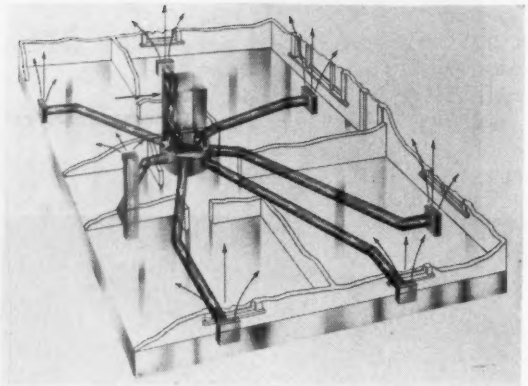
Offices in Over 50 Cities. See Your Phone Book.

Chicago 13, Ill., 3819 N. Ashland Avenue • New York 17, N. Y., 231 East 46th Street
Los Angeles 5, Cal., 1808 West 8th Street • Toronto, Ontario, 195 Spadina Avenue
Mexico, D. F., Apartado 63 Bis. • Honolulu 3, Hawaii, P. O. 2755—450 Piikoi at Kona

(a55)



While not exactly new in our industry, many consumer publications dramatize radiant heating as the "glamour" method of heating and present it as the answer to many heating problems.



Equally suitable for both concrete slab and crawl space construction, perimeter warm air heating is gaining in popularity as one of the methods for achieving ideal indoor comfort.

New Innovations Put Heating on a Par with "Glamour" Products of Other Industries...

RECENT DEVELOPMENTS in the heating industry have on them the stamp of *modern* . . . and this, in the language of dollars and cents, means an easier selling job for the heating contractor. Noteworthy examples are radiant panel and perimeter warm air heating. These interesting innovations alone have made it possible to dramatize heating products as never before. Having all the "naturals" for promotional purposes, they are helping many contractors beat stiff competition for the consumer dollar—even from those sources which feature "glamour" products such as automobiles, etc.

In the public's mind several of these new methods of heating have become intimately associated with the idea of "modern living," and it is this kind of public acceptance that is making the heating contractor's selling job easier and more lucrative.

Heating is a necessity, it is true, but these revolutionary, *modern* methods of heating become, promotion-wise, luxury items, and can be sold by means usually associated with this latter type of product. In this way, the heating contractor can bring his story to the public in a more interesting fashion: he can talk about the "mystery" of radiant panel heating, the scientific precision of the developments which led to perimeter heating.

And with the growing interest of the public, as evidenced by the number of prominent popular magazines which, from time to time, feature heating stories, the heating contractor is finding that his prestige in the community has increased, and that, having more things to talk about, there is a steadily increasing audience willing to listen.

Additional information on radiant panel heating can be found on page 95, this issue, and on perimeter heating, page 166, November issue.

Design and installation aids for warm air heating, like those shown above, are available to contractors (see article).

Engineering and Installation Aids...

ONE MINUTE at a reference book can often save hours of rule-of-thumb figuring. And often, it can mean the difference between figuring a job at a profit . . . or a loss. So, here is a partial list of engineering and installation aids especially designed to aid the heating contractor.

The Institute of Boiler and Radiator Manufacturers recently released Number Six of their series of installation guides. Entitled, "Guide No. 6, Panel Heating for Small Structures," the price is 50 cents. This guide is intended for use in de-

(Please turn to top of page 185)

Heating Schools . . .

(Continued from page 134)

The three-day school demonstrates, for example, how the cost of a forced circulation hot water heating system for a six room house can be reduced by more than $400.

Readers will find the 1952 schedule of I-B-R Short Courses in heating on page 130 of this issue.

The National Warm Air Heating and Air Conditioning Assn. has announced its two-day warm air heating sales and engineering schools for 1952 (page 163, November). Completely new material is being developed regarding the latest applications of heating, particularly in the field of perimeter warm air heating.

Product Improvements Add Utility; Sales Appeal...

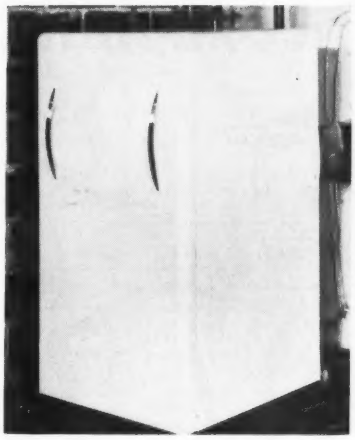
"WHY'S THE REFRIGERATOR down in the cellar?", ask friends and neighbors who inspect the new Front Royal, Virginia, home of Mr. and Mrs. George Buck (photo at right). Actually, the "refrigerator" is an ultra-modern oil-fired heating plant which includes a boiler, oil burner, hot water circulator and controls, as well as coils which produce hot water for baths, dishes and laundry. And the question evoked by the appearance of this new heating product is an example of how product improvements have added sales appeal in recent years.

Designed to sell by appearance as well as by performance, many heating products now contain revolutionary improvements and refinements which both increase the scope of application and make easier the selling job.

Modern furnaces and boilers (photo below) not only bring to the home accurately controlled, healthier heat, but their new shape and compactness have helped to add another dimension to modern living . . . the game room (remodeled basement). Also, "push-button" heat has added hours of leisure to the average homeowner's busy life. These are but a few of the ways in which product refinements have contributed to "the better life," adding at the same time considerable ammunition to the contractor's selling arsenal.

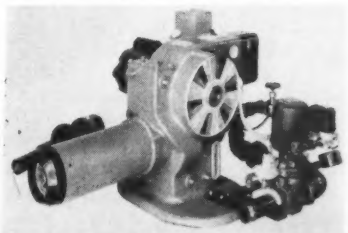
Many of these new improvements are described in the New Products section of this issue (page 120, and following).

ALWAYS WILLING to lend a helping hand to sales-conscious heating contractors, the manufacturers of heating products are making available an ever increasing number of sales aids. Many of these will be listed in forthcoming issues.



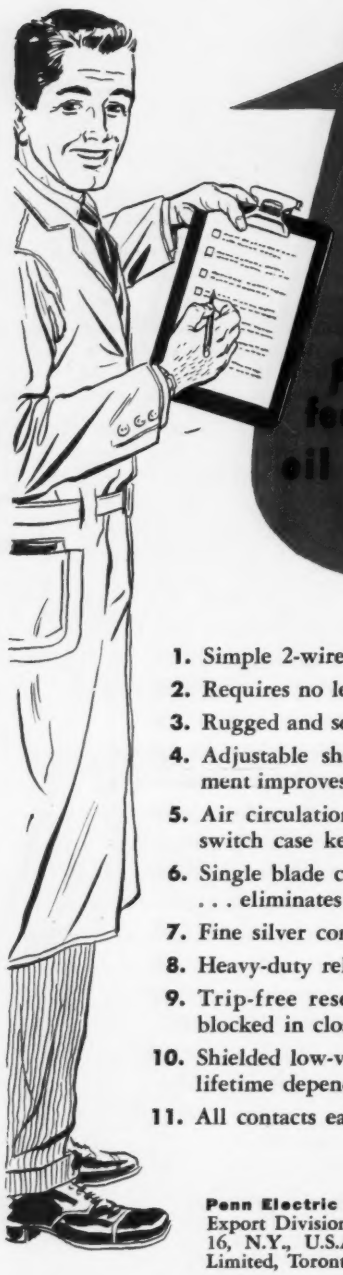
Above: It's not a refrigerator but a boiler. This National boiler is typical of many improved products packing sales appeal.

Versatile conversion burner units, which are both gas and oil-fired, help sell customers on the advantages of automatic heat.



Below: The heating industry's potent bid in the battle for the consumer dollar is typified by this boiler unit. Featuring a handsome, colorful jacket, the unit becomes an unobtrusive, yet attractive part of the modern recreation room.

COMPARISON TESTS PROVE...



only Penn Stack Switches have

Low Voltage Protection

plus all these features that keep oil burner customers SOLD!

1. Simple 2-wire low voltage hook-up.
2. Requires no leveling.
3. Rugged and sensitive stack element.
4. Adjustable shank ventilation on stack element improves performance on "slow" stacks.
5. Air circulation between reflector plate and switch case keeps interior parts cool.
6. Single blade combustion contact mechanism . . . eliminates sequence adjustment.
7. Fine silver contacts throughout.
8. Heavy-duty relay core and armature.
9. Trip-free reset — warp switch cannot be blocked in closed position.
10. Shielded low-voltage warp switch heater for lifetime dependability.
11. All contacts easily accessible.

GET THE FACTS . . . ASK FOR FREE DESCRIPTIVE FOLDER

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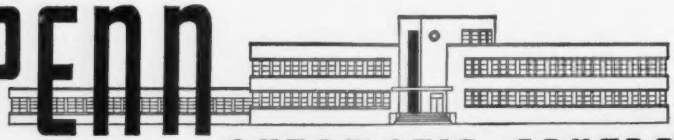
Export Division: 13 E. 40th Street, New York 16, N.Y., U.S.A. In Canada: Penn Controls Limited, Toronto, Ont.

NATIONALLY ADVERTISED IN BETTER HOMES AND GARDENS, AMERICAN HOME, NEWSWEEK

PENN



AUTOMATIC CONTROLS

FOR HEATING, REFRIGERATION, AIR CONDITIONING, PUMPS, AIR COMPRESSORS, ENGINES, GAS RANGES

Oil Burner Servicing

• Part 23 of a Series—Industrial Burners •

AS HAS been discussed before in this series, there is a definite need for surrounding the oil fire with a proper environment if good combustion is to be obtained. Therefore, this article will discuss the theory and operation of efficient combustion chambers for the burning of heavier oils. The actual details of combustion chamber construction are treated, along with practical tips on the selection of proper materials.

All fuel oils have multiple boiling points, ranging from that of the flash fractions, between 100 and 200 deg, up to the end fractions which may be over 700 deg. There is also a certain percentage of carbon residue which must be heated before it can burn.

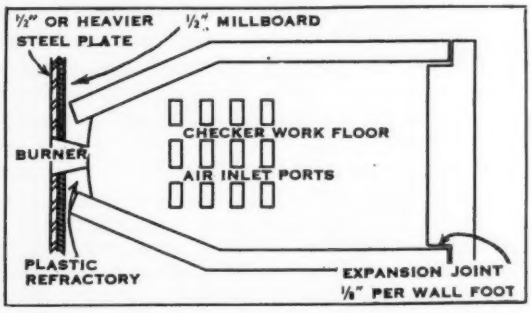


Fig. A: Shown above is a schematic drawing (top view) of an industrial oil burner installation utilizing a horizontal rotary burner. Note the characteristics of the firebox. (See article for details.)

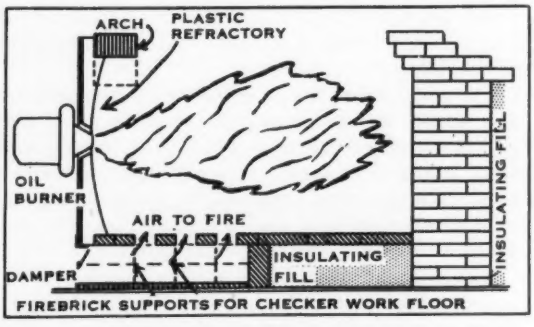
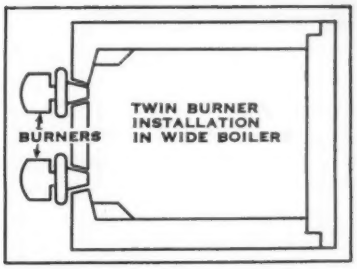


Fig. B: The above schematic drawing shows a typical combustion chamber of an industrial oil burner installation. Contractors should always consult with burner manufacturer for specific application.



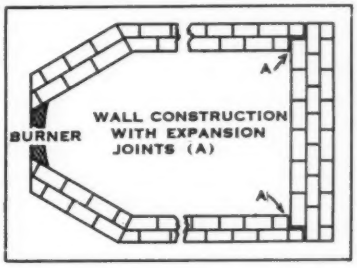


Fig. C: In a very wide boiler, a twin burner installation might look like the sketch shown at top. There are several possibilities.

Fig. D: Illustrated above (second from top) is the location of expansion joints in a typical firebox for industrial application.

The chief method of preparing fuel oils for combustion is called atomization. By breaking the fuel into small enough particles the vaporization process can take place in transit, as the oil travels from the atomizer toward the fire, and into it. Residual solids and semi-solids are also finely divided, and are progressively burned as they reach their combustion temperatures. Under correct conditions this can take place cleanly and efficiently, even with the heavy oils which contain more of the hard-to-burn fractions and more carbon residue.

The combustion chamber supplies the correct environment for the fire. If properly designed and built for the quantity of oil to be burned it conserves the heat of combustion within its walls, and does not allow any fractions of the fuel to go unburned, to be lost as smoke, vapor fumes (aldehydes), or carbon monoxide. Especially with large burners is the entire combustion chamber the mixing space for the oil and air. An incorrectly designed chamber could cause the waste of much heat by allowing excess air to bypass the fire, taking no part in combustion. This waste would be measured in low CO_2.

While there are certain general rules for designing and constructing large combustion chambers, the contractor *should not fail to consult with the engineering services of the manufacturer* of the particular burner he intends to install, and make use of his field engineer if available. Each burner has peculiar charac-

(Please turn to top of page 140)

Oil Burner Servicing

(Continued from bottom of preceding page)

teristics of flame pattern, etc., which might require special application in a particular installation. Most manufacturers will supply the greatest possible assistance in order to see that their product is correctly installed.

The first important step to take in designing the combustion chamber is to determine the gallons-per-hour (gph) rate to be fired. This can be a very complex step, involving many factors. The size of the burner, the cost of the installation, and its success, are dependent on making this determination as accurately as possible. In many cases it cannot be arrived at without help from many sources, especially if industrial processing is involved. Often the contractor must go to the makers of machinery and equipment for the heat requirements of the apparatus.

In many cases the owner or the plant engineer, by supplying figures on the per-day or per-hour coal or gas consumption, can help greatly in solving these problems. Since most processes use steam as the heat exchange medium it is important to determine the number of pounds of steam generated in any given period under *peak load.* The gph to be burned must adequately maintain steam pressure under peak load.

The vaporizing of a pound of water into steam requires about 970 Btu, but it is common practice to use the figure 1000 Btu since it is a handier figure to work with. Other factors such as the heat required to bring the water up to boiling temperature may increase the Btu requirements from 10 to 40 percent.

The efficiency of the boiler in which the installation is to be made is an important consideration. In general, with large boilers it is possible to obtain higher efficiencies from automatic oil firing than were possible with hand firing. One manufacturer of industrial burners offers the following table to its dealers:

PROBABLE BOILER EFFICIENCIES:

Fire-tube boilers, hand fired	60 to 67%
Water-tube boilers, hand fired	65 to 72%
Fire-tube boilers, stoker fired	65 to 72%
Water-tube boilers, stoker fired	70 to 77%
Fire-tube boilers, oil fired	67 to 75%
Water-tube boilers, oil fired	70 to 77%

NOTE: *When in doubt, figure 7% higher efficiency for oil over hand fired coal and 3% higher for oil over stoker firing.*

The contractor needs to know whether it was possible for the boiler to supply all requirements under the original conditions, and whether it had to be overfired at regular or at peak loads. He should not place himself in the position of claiming that the new installation will cure all manner of faults and inadequacies due to undersized or overloaded boilers.

In determining the gph rate the *combustion* volume of the boiler is an important consideration. This is not just the space occupied by the fire, it is the entire

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space between the firebox floor and the point where the burned gases enter the tubes or flue passages—in other words, all the free space into which the gases can expand. Boiler manufacturers' catalogs and rating books often contain this information about specific boilers. If not easily obtainable, combustion volume must be determined by measurement.

It is standard practice to assume a heat release of 30,000 Btu/hr per cu ft of combustion space. Since a gallon of No. 6 oil contains approximately 150,000 Btu per gal, a space of 5 cu ft would be required for each gph to be burned. However, installations are often planned in which only 3½ to 4½ cu ft of combustion space per gph are allowed. It would be well to consider the condition of the boiler before using a smaller figure. Many boilers would be badly overfired at 40,000 Btu/hr per cu ft. Damage to heat transfer surface could occur in the fire region.

Another evil that could result from overcrowding the fire would be that the tubes or flue passes might not be able to carry off the combustion products. This would have the effect of reducing the entry of air into the fire, causing incomplete combustion, carbon monoxide, smoke and soot. Most rotary installations receive the greater part of their combustion air through the firebox floor, induced by chimney draft. Overfiring causes high velocities to be built up in the flue passes, increasing resistance and reducing draft at the fire.

The size, height, and condition of the chimney are also factors in determining the quantity of oil that may be fired. There is generally less trouble with large industrial chimneys than with small domestics. Most chimneys that successfully handled the gas product of hand-fired coal are more than adequate for an equivalent heat release rate with oil.

Makers of industrial burners differ as to the recommended combustion chamber size in relation to gph. Floor area is the most common dimension used in this determination. Most manufacturers specify a floor

(Please turn to top of page 142)

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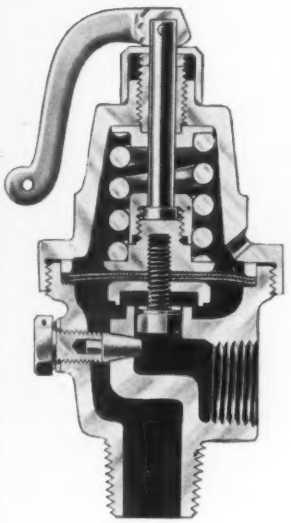

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Oil Burner Servicing

(Continued from bottom of page 140)

area between 70 to 90 sq in per gph, but since there are many variations in burning characteristics between burners it is best to use tables supplied by the manufacturer of the burner being installed. These are based on actual experience with this particular burner under various firing conditions, and cannot be generalized for all burners.

The shape of the combustion chamber is largely governed by the space available within the boiler setting or base. In many cases it will be long and narrow, in others short and wide. Occasionally the base will be round, making it necessary to construct a round or elliptic chamber in order to obtain all the necessary firing space.

Most boiler settings will provide a long rectangular area for the chamber, and since most oil fires are considerably longer than they are wide there will be little difficulty in finding room for the correct fire. There are many exceptional settings, however, where the width and the length are equal or nearly so. In very wide applications where it is difficult to fill the chamber with fire from a single burner it is sometimes recommended that two burners be fired side by side, into a duplex type chamber. (Fig. C, page 139.)

Fire shape is variable within certain limits by varying the quantity of nozzle air, or by the use of different types of air nozzles or other flame shaping devices. Where an exceptionally long, or an exceptionally wide firebox seems to be required, not covered in the burner maker's general information, specific help should be requested from the maker in the form of plans or other data pertaining to this boiler, or the services of the field engineer. The request should designate the make, model, and horsepower rating of the boiler, the gph to be fired at peak load, the space available for the combustion chamber, and a short description of the difficulties encountered.

The selection of combustion chamber materials is of the highest importance in large installations. Ordinary firebricks used in domestic work are not good enough. With intermittent operation they may never reach destructive temperatures; however, the bricks selected for large jobs should be rated at *no less than 3000 deg*, and should be the product of a manufacturer of known reputation. These are more costly than standard firebricks, but will stand up under hard firing.

The bonding cement for use between the bricks is similarly selected for performance under hard firing. Low grade fireclays can hasten the breakdown of the combustion chamber. The best practice in bonding brickwork is to thin the cement to a "peasoup" mortar. It is kept at this consistency throughout the entire operation by constant stirring and the addition of water when necessary. Too much mortar should not be mixed at one time—just enough for about two hours' use, since the material is air-setting and cannot take exposure. Drums of fire cement must be covered tightly when not being used.

The cement is not trowelled onto the bricks during construction. Each brick is dipped into the mixture,

(Please turn to center of page 193)

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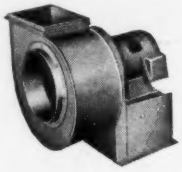

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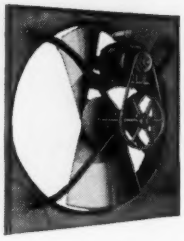

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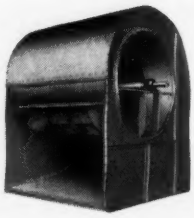

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Floor Furnaces

Selection • Application • Installation

Although designed primarily for small homes in the South and Southwest where the climate is mild, floor furnaces are now finding application in the Northern part of the country too

AMONG the several devices and appliances used to heat small houses and which are classified under the general category of "overflow heaters" is the floor furnace. Designed originally for use in the South and Southwest where the climate is relatively mild, the floor furnace now, however, is used in many small houses in the Northern sections of the country. It is principally suitable for use in one-story houses without basement and with a first floor of ordinary wood-frame construction.

It is the purpose of this article, the first of a series, to explain the fundamental principles of the floor furnace and to describe its application to the heating of small houses. Other aritcles will discuss the control problems associated with floor furnaces and installation, and servicing techniques will be treated.

The typical floor furnace is a warm air heating device, completely self-contained and arranged to be suspended from the floor construction. The device itself consists of four basic elements:

1. A combustion chamber equipped with either an oil or a gas burner.
2. An outer casing.
3. A inner shield surrounding the sides of the combustion chamber, providing a space between its inner surface and the sides of the combustion chamber and a space between its outer surface and the outer casing. It is arranged so that these spaces are interconnected at their lower ends.
4. A combined inlet and outlet grille fitting over the top of the outer casing at the floor level.

(A cross section through a typical floor furnace showing the four basic elements named above is shown in Fig. 1, above.)

The movement of air through the floor furnace takes place in the direction of the arrows shown in Fig. 1. This movement is increased when the difference in weight of the two air columns, the column of air heated by the combustion chamber and rising through the center of the device, and the column of cooler air descending in the space between the inner shield and the outer casing, is increased. This motive force, upon which circulation of air through the furnace depends, is known as the *gravity circulating head.* The circulating head increases with increase in height of the two air columns and with increase in temperature difference between the warm and cool air columns.

Floor furnaces are designed to be installed in one-

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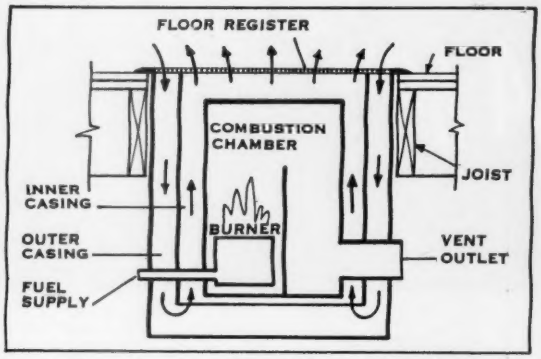


Fig. 1: Shown above is a schematic drawing illustrating the four basic elements of a typical floor furnace. The direction of the arrows shows the movement of the air while furnace is operating.

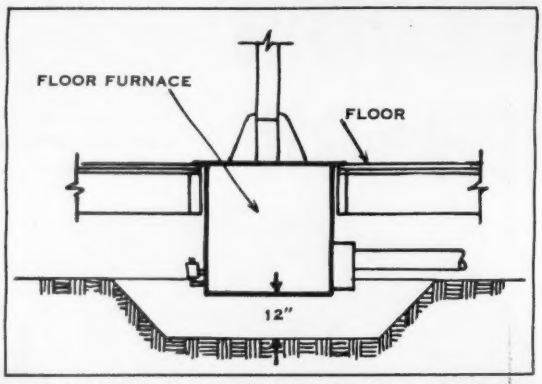


Fig. 2: The above drawing illustrates that in most installations the depth of the crawl space is insufficient to accommodate the floor furnace, and as a consequence, a pit must be constructed.

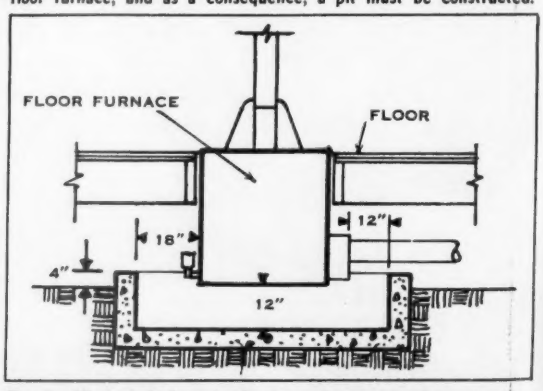
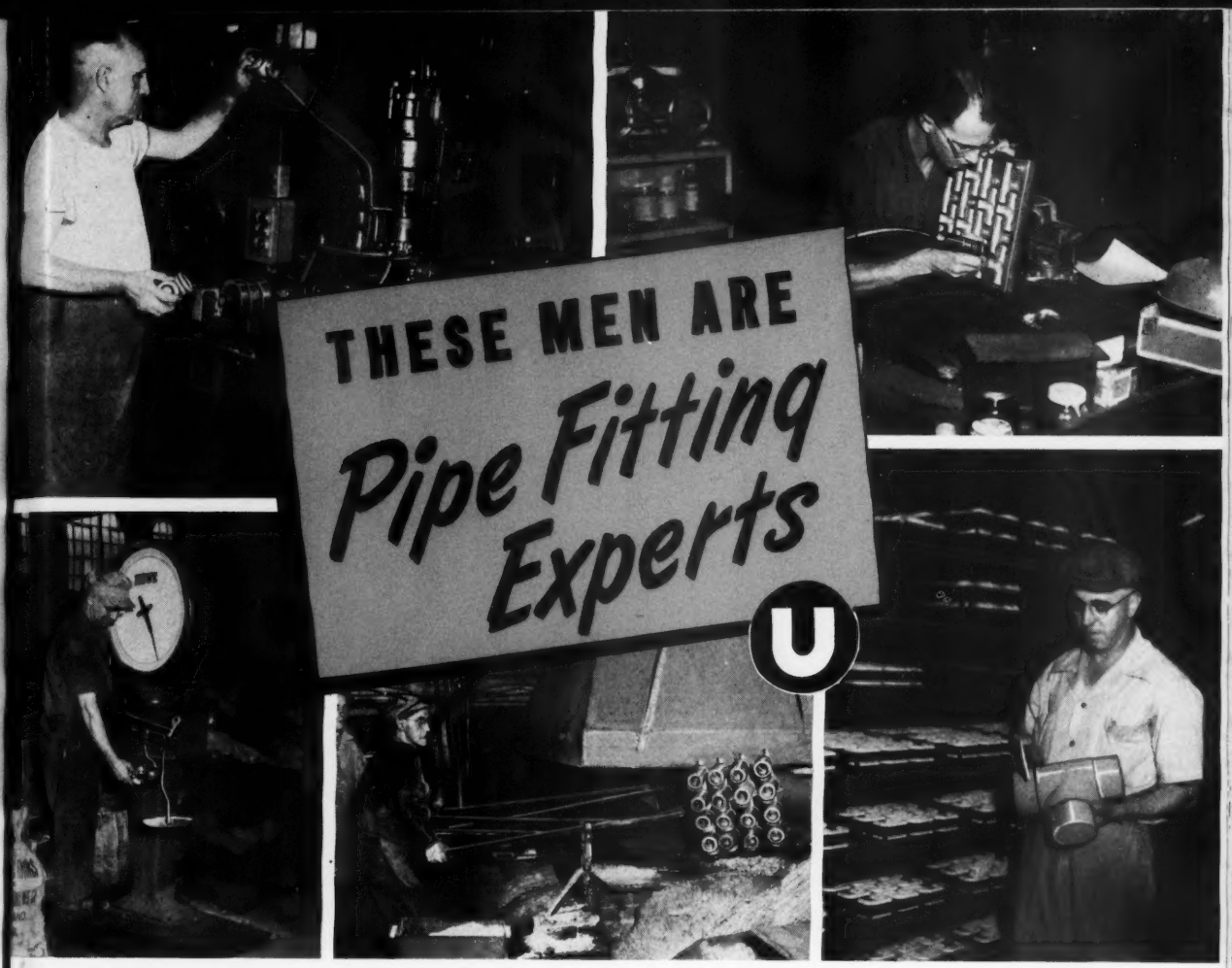


Fig. 3: Illustrated above is the type of water-proof construction with a raised edge to prevent the entrance of surface water which is recommended for typical pits excavated under floor furnaces.



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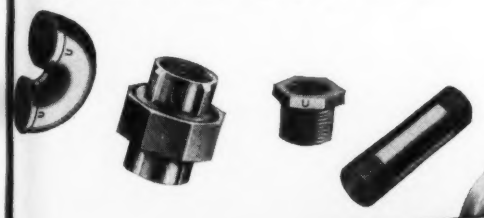

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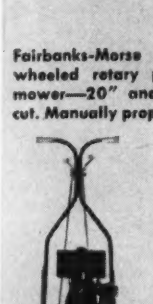

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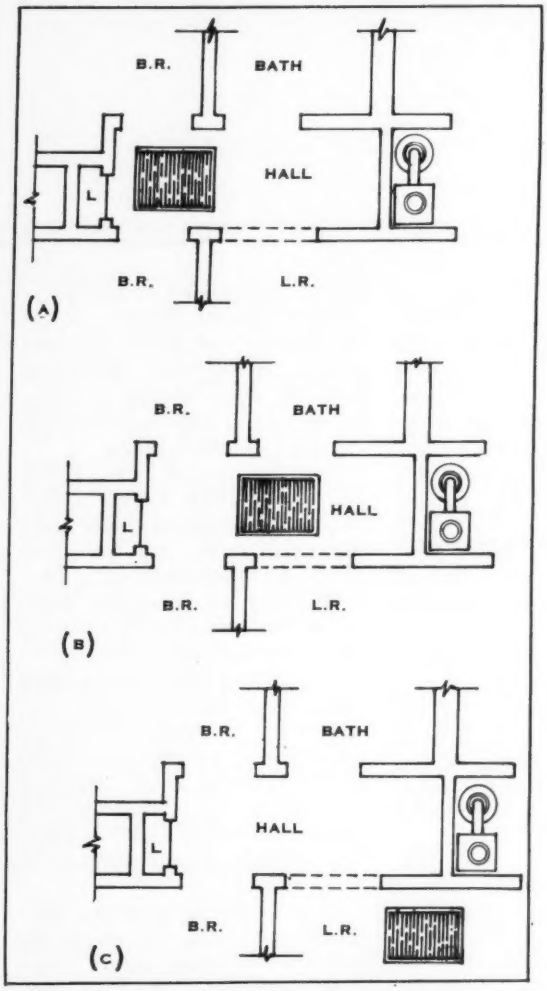


Fig. 4: The three diagrams shown above illustrate different locations of the floor furnace in the typical small home. It is essential that the contractor keep in mind the flow of foot traffic.

Floor Furnaces

(Continued from bottom of page 144)

story houses with a crawl space under them. The fact that crawl spaces are usually no deeper than necessary to provide minimum protection from termites and to provide the minimum amount of ventilation and the minimum space for access under the house, restricts the vertical dimension of a floor furnace. In most installations the depth of the crawl space is insufficient to accommodate the floor furnace and a pit as shown in Fig. 2, page 144, is necessary.

The construction of such a pit involves the possibility of its filling with water and flooding the furnace. For this reason pits should be built of waterproof construction and with a raised edge to prevent the entrance of surface water. Such a pit is shown in Fig. 3, page 144. The recommended minimum clearances are also shown in this figure.

The restricted vertical space is responsible for the fact that floor furnaces are designed to operate at much higher outlet temperatures than are common with gravity warm air systems installed in houses with basements. The vertical height of the air columns in a gravity warm air system, even in a one-story house from the grate level to the centerline of a register on the first floor, is about 8 ft. The temperature of the air leaving the register of a gravity warm air system is usually about 200 F.

The temperature of the air descending through the return duct is about 70 F. The difference in weight between the 8 ft descending column of air at 70 F and the corresponding 8 ft rising column at 200 F is about 2 ounces.

This is the circulating head that causes air movement through the system. If the height of the air columns were reduced to 2 ft the circulating head would be only one-half ounce and the furnace would have to be very large to produce a reasonable performance. The vertical height of the air columns in a floor furnace is about 2 ft so that a much higher outlet temperature must be used to move a reasonable volume of air.

Safety requirements of the Underwriters' Laboratories, Inc., for the approval of oil-fired floor furnaces, restrict the outlet air temperature to 350 F but even at this temperature the circulating head is only about 0.8 ounce. The approval requirements of the American Gas Association for gas-fired floor furnaces permit even higher outlet temperatures, 420 F, but this increase only increases the circulating head to slightly less than 1 ounce.

The relatively high outlet air temperature causes the central or outlet section of the grille to be heated to uncomfortable temperatures but the temperature is apt to be even higher due to the exposure of the central section of the grille to the upper surface of the combustion chamber. Heat is radiated from this surface, which may be as high as 1,000 F, to the metal grille raising its temperature even above the temperature of the air passing through it. It will be seen from Fig. 1 that the upper surface of the combustion chamber is fairly close to the under side of the floor grille and that this radiation effect is considerable.

Because of the high temperature of the outlet air and the high temperature of the center section of the floor grille, caution must be exercised in the installation of floor furnaces. Placed in the path of traffic between bedroom and bathroom, there is a decided hazard to anyone walking between bedroom and bathroom in bare feet.

It is especially hazardous to children who, on their way to the bathroom at night, are not apt to be as wide-awake as adults. If located so that the door of the linen closet swings outward over the grille, an additional hazard is created.

There is a secondary danger in locating the floor furnace close to a linen closet because combustible material stored in the closet might accidentally fall off the closet shelves onto the hot floor furnace grille, thus starting a fire.

A location quite common for a floor furnace installation is in a framed opening between living room and

(Please turn to top of page 194)

News of the Month

Christmas Program

The Water Heater Division of the A. O. Smith Corporation, Kankakee, Ill., recently announced it will again sponsor the traditional Christmas broadcast of Lionel Barrymore's performance of "A Christmas Carol."

S. E. Wolkenheim, water heater marketing director of A. O. Smith, announced the program will be carried from coast to coast as well as Canada and the Hawaiian Islands. On the basis of listener rating surveys, it is estimated that the program will be heard by more than 14,000,000 people.

Three-color window streamers are being supplied to dealers, as well as newspaper ad mats and copy for local radio spot announcements. Also available are special announcement postcards which dealers may mail to their customer lists as a reminder to listen to the broadcast.

Rheem Special Promotion

Rheem Manufacturing Company recently set up a hard-hitting Christmas sales promotion and tie-in with its dealers and distributors for November and December, according to C. V. Coons, director of sales for the company.

Main theme of the promotion is that an automatic water heater makes an ideal Christmas family gift that can be enjoyed for years.

Thousands of Rheem dealers and distributors throughout the country have already been serviced with complete Christmas promotion kits consisting of newspaper ad mats, giant-size postcards for mailing to prospects, radio commercials ranging from 20 seconds to one minute, and red "Merry Christmas" ribbons and bows for "gift wrapping" the heaters sold during that period, or for use in window displays and on sales floors.

Williams Defense Campaign

A new off-season sales campaign with the added purpose of assisting the government in the sales of Series "E" defense bonds is now underway, according to an announcement by E. H. Davidson, general sales manager of the Oil-O-Matic Division, Eureka Williams Corporation.

The campaign—"E's for Effort"—is based on company awarded defense bond bonuses to dealers and their salesmen over and above regular sales commissions earned from Oct. 22 through Dec. 8.

At left: 21 sales representatives and company officials met recently, to outline the future policies of the Union Malleable Manufacturing Company, Ashland, Ohio, and its subsidiaries.

Humidifier Assn. Formed

Formation of a new professional society to be known as the "Humidifier Association" has recently been announced by members of the executive committee.

The committee members, selected for their knowledge and experience in the warm-air heating field, are all executives of companies actively engaged in research in winter air conditioning.

They are: Marion Levy, Viking Air Conditioning Corp.; Arthur Evans, Skuttle Mfg. Co.; Jack Carr, Maid-o'-Mist, Inc. and J. W. Galloway, Automatic Humidifier Co.

Efforts of the Humidifier Assn., as outlined, are planned for three separate branches of activity:

1) Directing and encouraging both engineering and medical research into the proper method and the effects of the addition of controlled humidity to parched air.

2) Instruction to warm air heating dealers on the proper installation and sale of automatic furnace humidifiers.

3) A consumer publicity campaign conducted to inform the homeowner of fuel saving, structure preservation and health benefits which can be enjoyed by the low-cost addition of an automatic furnace humidifier.

Expansions

Heil Line Purchased

The Heil Company, Milwaukee, recently announced that its entire line of Aqua-Flow Water Systems has been purchased by the Morrison Company, same city.

Effective October 12, all activities of the water systems division of

At right: Officials of the National Radiator Company recently held formal dedication ceremonies for a new sheet metal fabricating plant. The plant is located in Duncansville, Pa.

Heil were assumed by Morrison. The Heil Company will continue to manufacture its complete line of home heating equipment.

According to George F. Morrison, president of the Morrison Company, the entire inventory of pumps purchased from Heil will be sold under the Heil name. However, as soon as practicable, the pumps will be identified as a Morrison.

The Aqua-Flow line includes shallow and deep well reciprocating type pumps and shallow and deep well jet pumps.

New Norman Plant

In keeping with a continuous expansion program, Norman Products Company, Columbus, Ohio, has acquired a new machine tool and die plant adjacent to its main plant.

Officials of the company announced that the 10,000 sq ft of floor space in the new plant will be devoted to tool, die and machine production.

At left: The Norman Products Company recently acquired a new machine and tool die plant adjacent to its main plant in Columbus, Ohio. The firm's defense contract division is located here.

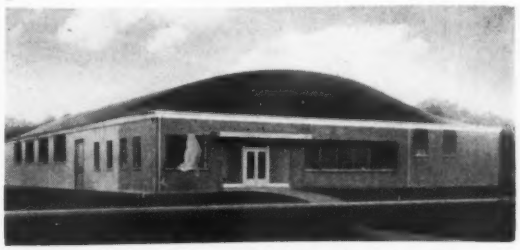
The company's defense contract division will be operated by superintendent of the contract division, Charles Rauch, at this new location.

Kresno-Stamm Opening

Opening of a modern, 16,000 sq ft factory at Palisades Park, N. J., was celebrated by the Kresno-Stamm Manufacturing Company recently with ceremonies attended by the Mayor and other local and state dignitaries.

The company will devote the added production potential provided by the new plant to volume manufacture of its patented Pressurized Air Gravity Ball Flame burners and Powrmatic pressure burners.

A new broader distribution, sales and price policy and program were announced at the same time by B. I. Stamm, president of the firm.



At right: Opening of the new Kresno-Stamm factory in Palisades Park, N. J. was celebrated recently by company, local and state officials. The 16,000 sq ft plant will be used to produce oil burners.

Standard Changes Name

Stockholders of the Standard Valve Manufacturing Company, Boston, recently announced they had changed the name of the company to the Standco Corporation.

According to M. M. Fineberg, president, the firm's products had been sold under the Standco name for many years, and it was decided that both the firm and products should carry the same name.

Detroit Lubricator Expands

Charles H. Hodges, Jr., president of the Detroit Lubricator Company, recently announced the purchase of a 75-acre factory site.

The acquisition of this property will permit the expansion of the company's facilities, required by the steady growth in volume of existing business and by the addition of new products.

Construction of the first of several units to be built on the new site will be undertaken as soon as conditions permit.

Obituaries

Earnest H. Littlefield

Ernest H. Littlefield, president of R. B. Dunning & Company, Bangor, Me., died recently. He was well known in the plumbing and heating industry, and was a former director of the Plumbing and Heating Wholesalers of New England.

Richard H. Lewis

Richard H. Lewis, chairman of the executive committee of the board of directors of Rudd Manufacturing Co., died in Pittsburgh recently after a short illness. He was 73 years old.

Mr. Lewis was president of the company from 1944 to September of 1951, when he made known his desire to assume a less strenuous part in the company's management.

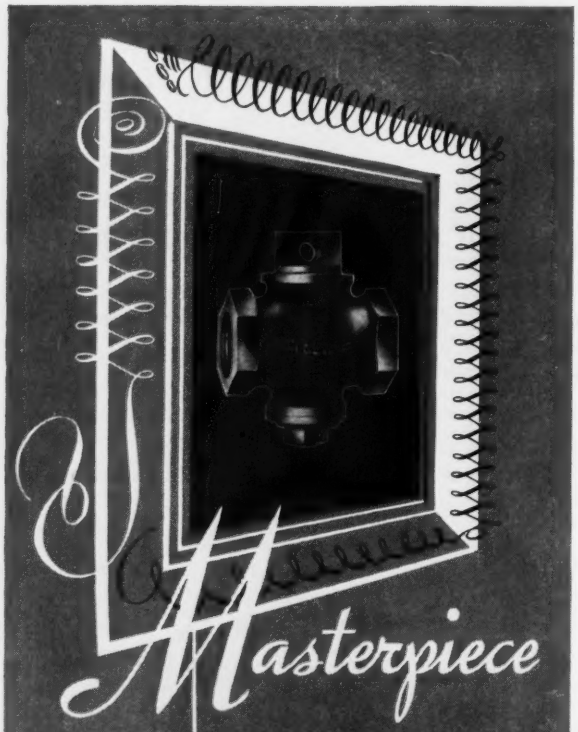
With the company since 1914, and a member of its board of directors for 23 years, he played an important part in its development.

Harry A. Rynearson

Harry A. Rynearson, Waterloo, Iowa, died recently in Rochester, Minn. He was 63 years old.

Mr. Rynearson was president of the plumbing and heating firm of Rynearson & Koc, Inc., Waterloo. He was also a member of the Iowa Master Plumbers Assn., and served as its president for three terms.

(Please turn to top of page 151)

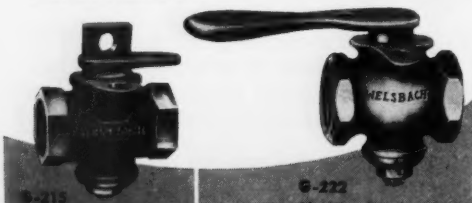


Masterpiece

Welsbach-Kitson products, like the old masters, have proved their quality through their use down through the years. Today, more and more Welsbach-Kitson products are proving their quality, economy and durability . . . adding to the list of regular, satisfied Welsbach-Kitson customers. Write now for catalog and price list.

G-208
Flat Way Standard Pattern With Lever Handle & Check

GU-208
Flat Way Standard Pattern With Lever Handle & Check Female Union on One End



G-215
Flat Way Standard Pattern Lock Wing—Flat Head

G-222
Flat Way Standard Pattern Lock Wing—Lever Handle

Quality Economy Durability

The WELSBACH CORPORATION
KITSON DIVISION
1500 Walnut Street
Philadelphia 2, Pa.

here's the difference..

CASH·ACME'S

★ REVOLVING HEAD

★ HIGHLY CALIBRATED SPRING ELIMINATES USE OF AUXILIARY GAUGE

The only valve on the market today with these two time-saving exclusives. Revolving head makes possible best positioning of valve at all times. A simple twist of the head brings pressure setting into vision instantly. The added advantage of being able to set the valve to the required relief pressure ON THE JOB without the use of a pressure gauge speeds up installation time even more.

(AVAILABLE WITHOUT LEVER OR TEMPERATURE RELIEF FEATURE)

Type RH Pressure and Temperature Relief

Use any of the CASH-ACME RH series for efficient relief operation wherever water flows. Hundreds of thousands of this valve series have been installed by satisfied plumbers across the country.

Write for complete information and free literature.

CASH ACME SILENT SENTINEL Automatic Valves

A. W. CASH VALVE MFG. CORP.
6661 E. WABASH AVE., DECATUR, ILL.

News of the Month

(Continued from page 149)

New Warehouse

Max Rothenberg, manufacturers' agent and distributor, recently announced the start of construction on a new warehouse in Long Island City, New York.

When the warehouse is completed, it will continue to carry larger quantities of the same brand stocks.

Coming Events

Dec. 3-4—NWHA—Annual convention of the National Heating Wholesalers Assn.; to be held at the Statler Hotel, Cleveland.

Dec. 5-8—NWAHACA—Annual convention of the National Warm Air Heating and Air Conditioning Assn; to be held at the Hotel Cleveland, Cleveland.

Jan. 21-24—Illinois—Annual convention of the Illinois Master Plumbers Assn.; to be held at the Abraham Lincoln Hotel, Springfield.

Jan. 28-30—ASHVE—The 58th annual meeting of the American Society of Heating and Ventilating Engineers; to be held in St. Louis.

Jan. 31-Feb. 2—Ohio—Annual convention of the Ohio State Assn. of Master Plumbers; to be held at the Netherland Plaza Hotel, Cincinnati.

Feb. 15-16—Kansas—Annual convention of the Kansas Master Plumbers Assn.; to be held at the Jayhawk Hotel, Topeka.

Feb. 18-20—Wisconsin—Annual convention of the Wisconsin Master Plumbers Assn.; to be held at the Schroeder Hotel, Milwaukee.

Feb. 21-23—Iowa—Annual Convention of the Iowa Master Plumbers Assn.; to be held at the Savery Hotel, Des Moines.

Feb. 28-Mar. 1—Minnesota—Annual convention of the Minnesota Master Plumbers Assn.; to be held at the Hotel Nicollet, Minneapolis.

April 14-18—OHI—29th Anniversary Oil Heat Exposition and 29th annual convention of the Oil Heat Institute of America; to be held at the Commercial Museum, Philadelphia.

June 2-5—NAMP—Annual convention and exposition of the National Assn. of Master Plumbers; to be held in Atlantic City, N. J.

Appointments

Price-Pfister Brass Manufacturing Company, Los Angeles—Loeb Hinderer as vice president in charge of production.

Given Manufacturing Company, Los Angeles—Elm Weingarden to regional sales manager in charge of sales for the state of California.

S. P. Owen

J. F. Thomas

Rockwell Tools, Inc., Columbus, Ohio—Samuel P. Owen as advertising manager.

The National Radiator Company, Johnstown, Pa.—James F. Thomas as plant manager of the new Duncansville, Pa., sheet metal fabrication plant.

General Controls Company, Glendale, Calif.—Robert L. Farmer as factory sales engineer.

Viking Air Conditioning Corporation, Cleveland—John C. Carmen as new representative in Michigan, northern Indiana and northwestern Ohio.

R. L. Farmer

J. C. Carmen

D. K. Gedman

R. E. Arnold

C. A. Dunham Company, Chicago—Donald K. Gedman as acting defense contract officer.

The Robinson Clay Product Company, Akron, Ohio—Russell E. Arnold as director of research and development.

Bryant Heater Division, Affiliated Gas Equipment, Inc., Cleveland—H. W. Milner as manager of the special accounts division.

H. W. Milner

F. B. Perrson

Surface Combustion Corporation, Toledo—Frank B. Perrson as special representative for the Janitrol Domestic-Commercial Space Heating division.

A. O. Smith Corporation, Milwaukee—Charles Smith as manager of the Product Service Division at Chicago, with P. H. Fahrer as his assistant. Also, George Carlson as manager of the Los Angeles Product Service Branch.

P. Fahrer

C. Smith

G. Carlson

W. S. Cooper

American Radiator & Standard Sanitary Corp., Pittsburgh—William S. Cooper to the newly created position of sales manager of engineered products; he will handle the sale of air conditioning, cooling and heating equipment.

J. F. Knoff

T. Hollencamp

B. Anderson

L. R. Butler

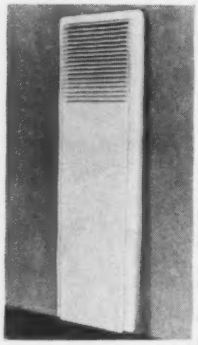
Airtemp Division, Chrysler Corporation, Dayton, O.—J. F. Knoff as general sales manager and T. B. Hollencamp as national service manager.

Hays Manufacturing Company, Erie, Pa.—L. R. Butler as representative for Louisiana, Mississippi and Tennessee; and B. L. Anderson as representative in Indiana and Illinois.

New Products

(Continued from bottom of page 123)

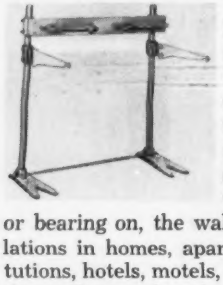
Recessed Wall Heaters



A new type recessed vented wall heater, called the Williams Uniflow, employs a new principle —a vent dilution system which enables the heater to discharge heat from its entire register area —resulting in more heat circulation. Full-flow louvers direct heat into the room and away from the walls. Both single and dual models slip easily between two standard 4-in. studs on 16-in. centers. The wall panel is designed to eliminate the need for bottom grilles, and is set above the baseboard, to allow the wall-to-wall floor coverings, if desired. A hinge arrangement enables the wall panel to swing open, providing convenient access to the controls and furnace for cleaning and servicing. The porcelain-enameled heating element is dieformed, electrically welded and free from baffles. Five sizes are available: 25,000 and 35,000 Btu Singles; and 35,000, 45,000 and 57,000 Btu Duals.

Manufacturer: Williams Radiator Co., 1821 Flower St., Glendale, Calif.

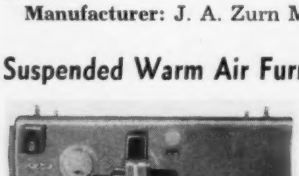
Carrier for Drainboard Sinks



A chair carrier for drainboard sinks, recently announced by the J. A. Zurn Mfg. Company, utilizes balanced, web-type foot supports, rigid tubular uprights and heavy cast iron arms, to provide full cantilever support of a sink without any assistance from, or bearing on, the wall. Model Z-1239 is for installations in homes, apartment houses, hospitals, institutions, hotels, motels, etc. It may be installed behind the wall or within the wall, and its supporting arms, protruding from the finished wall, are so constructed as to insure full support of drainboard sinks of any manufacture. These supporting arms can be furnished in lengths up to 30 in. with either lug adapters —to secure the sink to the arms—or with leveling screws.

Manufacturer: J. A. Zurn Mfg. Co., Erie, Pa.

Suspended Warm Air Furnace



A suspended oil-fired warm air furnace in two sizes is now being produced by Delta Heating Corporation. This furnace can be used to heat a basementless home without a utility room by installation in the crawl space underneath the house or in the attic, with provisions for pipe legs and flanges to support the furnace. It can also be installed in partly evacuated or low-ceiling basements. Model SU-110 has an output of 110,000 Btu hr.; the smaller SU-75 unit will develop 75,000 Btu hr. Both units measure 62 in. long, 20 in. high and 28 in. wide and are fired with the Delta flanged atomizing oil burner. Built-in refractory combustion chamber, air filter and large water-wheel type blower fan are shipped with the factory-assembled unit.

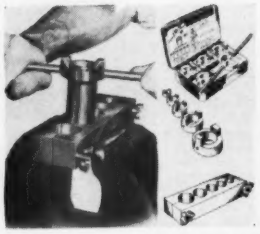
Manufacturer: Delta Heating Corp., Trenton, N. J.

Shallow or Deep Well Water System

The Climax Blue Streak pump is a fully automatic water system that is interchangeable for shallow or deep well service through the addition of an inexpensive conversion package. A one piece impeller, precision machined, balanced and securely mounted on a stainless steel motor shaft, is the unit's only moving part. The Climax engineers have designed this pump so that no air charger is required. The pump features a single unit, self-priming, positive pumping action, can be used with interchangeable motors from ⅓ to 1½ hp, and is recommended for water levels from 5 to 150 ft, with pressures up to 40 lbs.

Manufacturer: Climax Engine and Pump Mfg. Co., Clinton, Iowa.

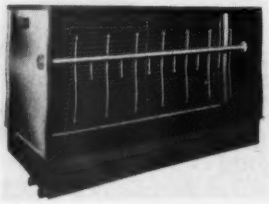
Fine Thread Tubing Die



Guiding as it threads, a new tube threading set with self-guiding dies in five sizes is now available to the industry. The Speedy Fine Tube Threading Set provides the journeyman with a simple means of putting a fine thread on brass tubing without the bulky tools and fixtures. The tubing is held securely by means of holder or clamp; the proper die head is placed over the end to be threaded, and, with a few turns, it is threaded and ready for use. The set of steel dies is furnished for 1, 1⅛, 1¼, 1⅜ and 1½ in. O. D. brass tubing. The complete set is packed complete, including handles, in a metal box. The Speedy Tubing Holder, a companion accessory for use with the tube threading set, locks in a vise and securely holds tubing (in sizes mentioned above) securely for cutting, threading, or flaring.

Manufacturer: Chicago Specialty Mfg. Co., 2954 W. Lawrence Ave., Chicago 25.

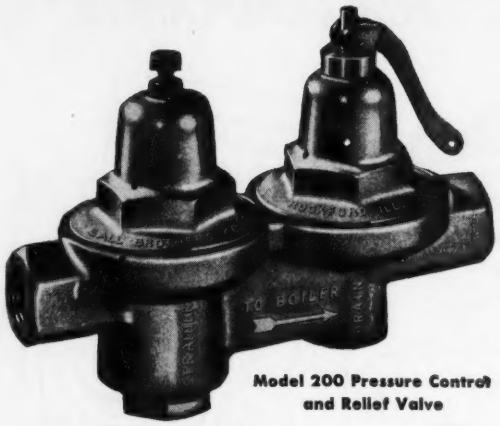
Sprayed Coil Dehumidifiers



The Kennard Corporation recently announced the addition of sprayed coil dehumidifiers to their present line of equipment. These units are available in a large number of sizes and are of galvanized construction with copper tube and copper finned coils for long life and are said to offer the advantage of washed air at all times as well as a wetted surface of the cooling coil for

(Please turn to top of page 155)

FOR ALL HOT WATER HEATING SYSTEMS



Model 200 Pressure Control and Relief Valve

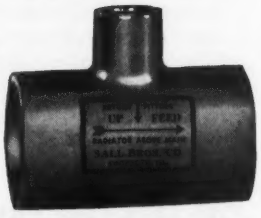
FLOW FITTINGS BY *Sall*

Available in Cast Iron or Copper

SALL Fittings greatly improve the efficiency of the entire hot water system. One fitting on the return line is all that is needed. This directs the free flow of the water through the radiator. SALL Fittings are applicable to both cast iron and copper radiation.

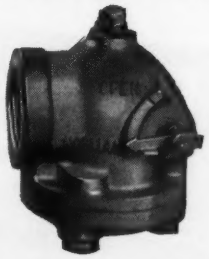
SALL one pipe fittings are available in either cast iron or copper. Sweat type for use with copper tubing.

All sizes 1" to 2" upfeed return or down-feed return.



ANGLE FLOW CHECK VALVE

Designed for one and two pipe systems, the SALL Flow Check Valve performs its function unfailingly. Automatic in operation, but when necessary can be locked in position for gravity circulation. Small ½" port at top permits installation expansion tank, preventing air-binding. Learn more about the complete SALL Line . . . get in touch with your SALL representative.



SALL Brothers COMPANY

2320 KISHWAUKEE ST., ROCKFORD, ILL.

with a GREENLEE HYDRAULIC BENDER

Yes, make pipe bends "right on the job" . . . exactly where and when you need them! And do the job swiftly, accurately with a GREENLEE Hydraulic Pipe Bender.

Bends pipe up to 4½". Simple to operate, easy to carry, set up and shift from job to job. With a GREENLEE *one man* makes smooth, precise, uniform bends in but a few minutes. Speeds your piping installations, cuts costs on labor and materials. In timesavings alone, the GREENLEE pays for itself quickly.

Ideal for radiant heating jobs, too. For complete details write for free Bender Booklet E-201. Greenlee Tool Co., Division of Greenlee Bros. & Co., 2372 Twelfth Street, Rockford, Illinois.

TOOLS FOR CRAFTSMEN

GREENLEE

Greetings

and appreciation from

the entire personnel and manufacturers of the WILSHIRE HEATER . . . wishing their customers a Merry Christmas and a Prosperous and Happy New Year.

Southern Heater

CORPORATION

133 Palmer Ave. Compton, Calif.

"It's good trade

SWAPPING COMPLIMENTS FOR COMPLAINTS"

It's typical of human nature to yell when something goes wrong — and keep quiet when things are fine. A fellow in business can count on hearing *all* the complaints — but very few compliments.

Well, Chicago Faucets (according to our mail) seem to cause that rarest of customer reactions — we mean the one where people say something nice about Chicago Faucets, and the man who sold them. Could be the easy, money-saving, leak-free operation of Chicago Faucets that gets them. Or their quality of year-in, year-out dependability. Whatever it is — it sure makes folks speak up — and in a way it's good to hear.

Little wonder, Chicago Faucets are today's most-wanted faucets.

THE CHICAGO FAUCET COMPANY
CHICAGO 39, ILLINOIS

Chicago Faucet Products are distributed through the plumbing trade exclusively.

(Continued from bottom of page 152)

better heat transfer and closer DB-WB approach. Unit is also suited for use as an evaporative cooler for off-season loads.

Manufacturer: Kennard Corp., 1819 S. Hanley Rd., St. Louis 17.

Counterflow Furnace

This compact counter flow air conditioning furnace (Model 75) is designed for use in basementless homes, homes with crawl spaces, for radiant or perimeter warm air heating systems, and because of the front flue, is ideal for utility rooms. The combustion chamber is pre-cast and is readily accessible by the removal of one plate. An explosion door is provided to check the furnace, and accessibility to the motor and blower is provided through a removable front door. Equipped with Quiet Automatic flanged oil burners, this burner is rated at 75,000 Btu, constructed of 12-gage welded steel, available in green or blue, and measures 25 by 26 by 60 in.

Manufacturer: Quiet Automatic Oil Burner Corp., 33 Bloomfield Ave., Newark 4, N. J.

New Lightweight Drills

A new series of small, lightweight portable air drills recently announced by Ingersoll-Rand features: (1) a one piece housing that provides a compact, well balanced, lightweight drill; (2) a powerful redesigned 5-vane air motor, to provide a constantly smooth flow of power; (3) a built-in automatic lubricator; and (4) an adjustable exhaust deflector that permits the operator to direct exhaust air in any direction. Known as the OA and OB Multi-Vane Drills, the tools are available in several different speeds for work up to ¼ in. Attachments, both straight and angle types, are available to adapt the tools to reaming, tapping, wire brushing, sanding, screw driving, nut-running and close quarter drilling.

Manufacturer: Ingersoll-Rand Co., Dept. PT, 11 Broadway, New York City.

Measuring Instrument

The manufacturer announces the Model 200 Rolatape, an instrument with a wheel exactly 2 ft. in circumference that accurately measures and records as it is rolled over distance to be measured. The instrument, measuring up to 100 feet, then repeating the cycle, can be used by contractors for general field work such as locating valves and mains, job layout and rechecking, as well as general estimating work. The unit measures line to line or wall to wall, around curves and contours—easily and accurately. The total distance is recorded in feet and inches by the built-in totalizer and recessed scale on wheel circumferences; a clearly audible click every 2 feet permits running account; a loud bell tone indicates

(Please turn to top of page 156)

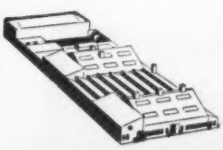
A FINE NAME IN WATER HEATER *Thermostats*

Utility

1. *Long Trouble-Free Service Life*
2. *Thermostat and Valve Available Separately*
3. *Ruggedly Built*
4. *Few Parts and Easily Accessible*
5. *Built to Last*
6. *Tube Lengths 4⅜, 6½ and 8½ in.*

In over twenty years of building gas controls we have never offered a product which so rapidly gained national acceptance. For Water Heater Thermostats on which you can DEPEND, specify UTILITY.

Certified by A.G.A.



THE UTILITY CONTROL COMPANY FACTORY

Utility CONTROL COMPANY
832 EAST 108th STREET • LOS ANGELES 59, CALIFORNIA

YES, it's amazing what this new patented aerator does to water. Faucets with Spring-Flo make water taste better, wash and rinse faster, save soap—and the bubbles prevent splash.

It's amazing, too, how much easier they are to sell—and how sales of faucets with Spring-Flo Aerators lead to sales of other plumbing goods. **Spring-Flo Aerators are supplied with the lavatory and sink faucets of all leading faucet manufacturers.**

Powerful national advertisements in leading magazines like "American Home" and "Better Homes and Gardens" push the sale of faucets with the Spring-Flo. Make sure that *your* customers know that *you* handle faucets with the Spring-Flo.

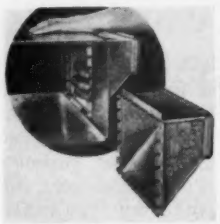
CHASE BRASS & COPPER CO.

(Continued from bottom of page 155)

100 ft. total, and a handy knob allows the operator to reset the indicator for each new measurement.

Manufacturer: Rolatape, Inc., Santa Monica, Calif.

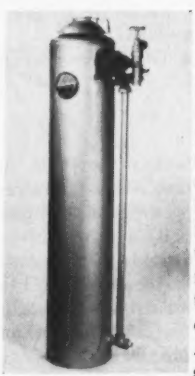
Pre-Notched Duct Edges



A new, pre-notched edge for all galvanized fittings with collars that close by finger pressure at every connection when being installed, has been recently announced by the manufacturer. The new collar edges are reported to be advantageous time-savers because there is no further need for notching the edges, straightening them with pliers or hammering them closed on the job. All notches are die-cut in a U-shape to provide extra strength; corners are rounded to protect the installer from possible finger injury. Pre-notching is provided on all four sides of every unit with collar edges.

Manufacturer: Adelta Mfg. Co., Inc., Philadelphia.

Automatic Water Softener



A home water softening unit equipped with a special timing valve for automatic control of regeneration has recently been announced by the Lindsay Company. The unit eliminates 90 percent of the time spent by the owner in regeneration, according to the manufacturer. An automatic valve on the softener controls the flow of water during the regeneration cycle and—when the time setting has expired—switches the unit back into service. Available in six sizes, the Lindsay Automatic also features spin-top closure, inside-and-out hot dip galvanized or plastic coating.

Manufacturer: The Lindsay Co., Dept 2-D, St. Paul 1, Minn.

Oil Burning Suspended Furnaces

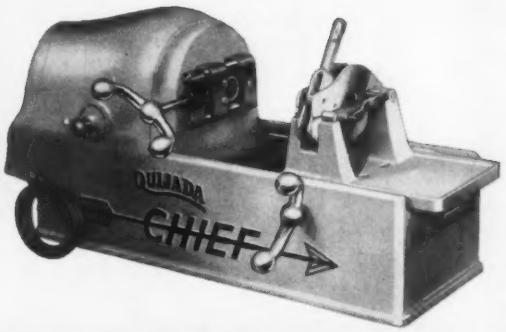
In another expansion of its product line, the manufacturer announced the addition of two new oil burning suspended furnaces. Like the other three models of the OF-600 Series, the 100-S, with a bonnet output of 100,000 Btu, features a corrugated, plate-type heat exchanger of 12-gage steel. A pressure-atomizing burner is flange mounted and fired into a horizontal, round combustion chamber. "Tunnel firing" provides efficient combustion of the fuel, and a large heating surface is provided. Filter frames and access panels to the sirocco-type blower assembly are located on the four sides and ends of the units. The OF-600 suspended furnaces also include models having 80,000, 120,000 and 180,000 Btu bonnet output capacities.

Manufacturer: Norge Heat Div., Borg-Warner Corp., Detroit 26.

(Please turn to top of page 159)

can your present pipe threading method match these QUIJADA CHIEF threading, reaming, cut-off speeds?

PIPE SIZE	½"	1"	1½"	2"
THREADING TIME	11 sec.	17 sec.	20 sec.	23 sec.
REAMING TIME	YOU REAM WHILE YOU CUT			
CUTTING TIME	5 sec.	5 sec.	7 sec.	9 sec.
TOTAL TIME	16 sec.	22 sec.	27 sec.	32 sec.



QUIJADA TOOL CO., INC.
5474 Alhambra Ave., Los Angeles 32, California
SOLD ONLY THROUGH JOBBERS

SEE YOUR JOBBER OR WRITE NOW TO DEPT. DE12

CHIEF POWER DRIVEN PIPE AND BOLT THREADER DOES IT FASTER...BETTER!

Now you can increase your production with actually less effort on the part of operators. You'll find all Quijada features lead to trouble-free, faster production on every job. It's easily portable too... weighs only 190 pounds fully equipped. You can take it anywhere there is power.

QUIJADA CHIEF EXTRA SPEED FEATURES

AUTOMATIC CHUCKING
Automatically grips and centers pipe. Just pull switch to chuck... push to release.

QUICK-OPENING DIE HEADS
Easy opening for instant pipe size change. An effortless operation for greater speed.

CUTTER ON JAW HOUSING
Simple to make up fittings on machine... cutter never in way. Removable for nipples.

REAMS WHILE THREADING
Reaming takes absolutely no time. Flat blade reamer attached to die reams as you thread.

ALBERENE ANNOUNCES

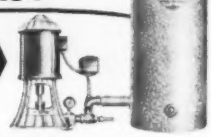
... Effective immediately, *all* Alberene sinks will be special sinks, built to order to fit any space, in any dimensions. Manufacture of production-run laundry trays has been discontinued.

Just send us complete dimensions (ask us for our easy-to-use order forms). There are nine types you may choose from. If you have any trouble in design, phone our local representative, or write to —

ALBERENE STONE CORP. OF VIRGINIA
419—4th Ave., New York 16, N. Y.

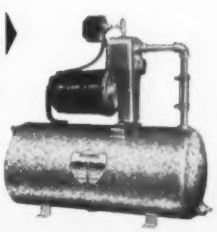
MAKE MORE MONEY in running water with these PROFIT-LEADERS!

HEAD OF THE HOUSEHOLD—Advance V-Series of centrifugal, Hydro-ejector type pumps, from ¼ to 10 H.P. Pumping levels to 200 feet. Streamlined, quiet, dependable. Write for catalogs.



MEET MR. MULTISTAGE—Breaking performance records for extreme high pressure shallow well pumping, or deep well pumping to 300 feet! One of a complete line of multistage models for deep or shallow wells. Inquire.

ALL-AMERICAN. Advance's newest; America's finest—a 100% self-priming shallow well system, loaded with exclusive, automatic features. Available with vertical tank or as package unit. Thousands sold!



Distributors Dealers Increase your share of running water PROFITS in your own community. Sell Advance — the leader. Nationally advertised and merchandised.

FREE... New 20-Page Color Brochure
Write nearest office today

ADVANCE PUMP COMPANY
BERKELEY, CALIF. HAMILTON, OHIO
"Pioneers of the world's standard Hydro-Ejector Type pump"

Extra fast, easy pipe cutting with RIDGID

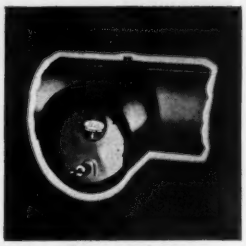
● It rolls right through any pipe with least effort, quick almost burrless cuts—factory tested, tracks perfectly. Special thin-blade cutter wheel for extra fast cutting—or heavy-duty wheel for extra long service. Guaranteed warp-proof special malleable housing. Five models to 6″ pipe; 4-wheel short-handle models for speedy cutting in tight places. For tops in clean, easy pipe cutting, buy RIDGID Cutters at your Supply House.

RIDGID
★ Work-Saver Pipe Tools ★

CONTROLLED DRAFT BY field BAROMETRIC CONTROLS

...the only draft control that's nationally advertised to your customers

field TYPE M

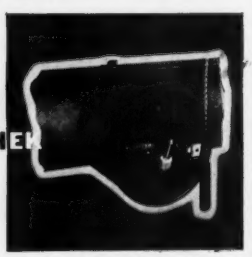


First and finest for all types of automatic heating plants.

field TYPE R and "SCOTTY"

First and finest for all types of space heaters and ranges.

field BAROCHEK



First and finest for hand-fired furnaces and boilers, a combination check damper and draft control.

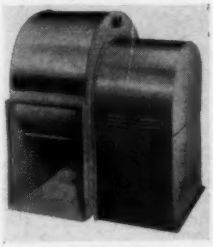
field RNA-W

First and finest for automatic water heaters.

field CONTROL DIVISION
H. D. CONKEY & CO., MENDOTA, ILL.
AFFILIATES:
Conco Building Products, Inc.
Brick - Tile - Stone
Conco Materials Handling Division
Cranes - Hoists

(Continued from bottom of page 156)

Weatherproof Centrifugal Fan



A new centrifugal fan arrangement, with a weatherproof hood over the motor drive section, can be installed outdoors without further protective enclosure. Designated as Trane Arrangement #10, the fan features high-efficiency, low noise, and low horsepower characteristics and reportedly is able to deliver a given air volume with a substantial saving in horsepower. The line includes forward curved models in 21 sizes from 12 to 89 in. wheel diameters and backwardly inclined models in 23 sizes from 12 to 109 in. diameters.

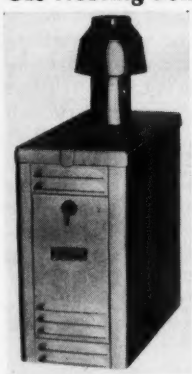
Manufacturer: The Trane Co., LaCrosse, Wis.

Suction Line Strainer

Intended for use in pump suction lines, this 1½ in. suction line strainer will fit a 2 in. tank opening and is designed so that the liquid must enter from the sides instead of the bottom. This feature does not trap water and keeps the line free from foreign matter and sediment while permitting maximum flow. Known as the 611 C, the new strainer enables the use of a 2 in. tank opening, and on existing installations where volatile compounds have been used, will eliminate the danger of an explosion set off by sparks caused when chipping out existing bushing. The unit can also be used in initial installations for any size opening, 2 in. or larger. Its body is made of galvanized iron.

Manufacturer: Universal Valve Co., Elizabeth, N. J.

Gas Heating Boiler



A new "gas to gas" model Hydrotherm heating boiler, which automatically switches its source of heat from the city gas line to a stored "reserve" of bottled LP gas, has just been announced by the manufacturer. This is accomplished by an outside thermostat, installed in addition to the regular room thermostat, which switches the source of heat for the home from natural gas in the city main to the bottled LP gas reserve. The Hyrotherm will burn both natural or LP gas at maximum efficiency. The outside themostat switches from natural gas to LP if outside temperature drops below a minimum temperature (which is usually predetermined by the utility). The thermostat, which can be procured locally to comply with regulations of the utility, requires a single pole double throw snap action contact arrangement—in one position it establishes the connection from the room thermostat to the natural gas valve and in the other position it establishes the connection from the room thermostat to the LP gas valve.

Manufacturer: Hook & Ackerman, Inc., 18 E. 41st St., New York 17.

(Please turn to top of page 160)

Say VENT-RITE best to get the Vent Valves for your heating jobs

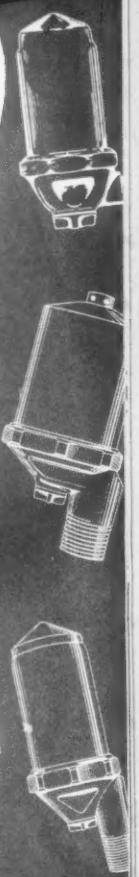
Vent-Rites Insure Balanced Heating

You'll build up genuine customer satisfaction by using Vent-Rite Venting Valves on home heating installations.

With Vent-Rites your customers will discover that it isn't necessary to overheat some rooms in order to get enough heat in others. That's the secret of the scientific Vent-Rite method of Balanced Radiation. And along with uniform heating will come greater comfort, and lower fuel bills. You can order Vent-Rite Venting Valves from your wholesaler . . . in a wide variety of types, sizes, outlets, and venting capacities.

VENT-RITE No. 1
(non-vacuum)

For Radiators
⅛" Side Connection with Siphon. 3/32" Diam. Vent Port. Overall Height 3".



Be Right with VENT-RITE VENTING VALVES

Best because scientifically designed by the pioneers in vent control

ANDERSON PRODUCTS INC.
Cambridge 39, Massachusetts
Makers of a Complete Line of
VENT-RITE VENTING VALVES

The man on the job knows

ALLENCO

first*

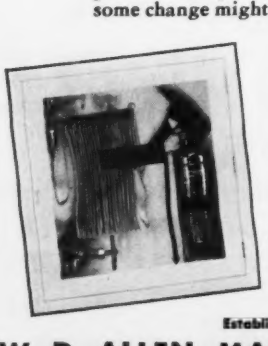
in INTERIOR FIRE PROTECTION

● **Meets Strictest Specifications**
Except for those rare cases where a second brand is requested, you can't miss by using ALLENCO . . . the standard for 64 years.

● **Complete Selection; Reliable**
Every unit for portable or permanent standpipe-type protection is provided the way you want it by ALLENCO—and you can *rely* on it!

● **Figures Easier, Quicker, Right**
Whether you figure from our clear and concise catalogs—or use the services of our Home or Sales Offices—you get a good, safe bid.

● **Goes in Right, Right Away**
No waste time or labor with ALLENCO products—they're delivered *as ordered.* When some change might serve better, we ask you.



ALLENCO

fire hose units are virtually "custom built"—combining your choice of several alternatives on each important point. So widely preferred, they are typical of the whole ALLENCO line.

*Voted 1st by architects, engineers, contractors, distributors. Also complete line of hose fittings, couplings, etc. for all purposes.

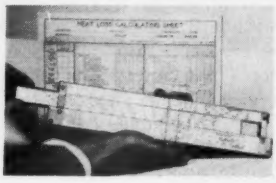
Established 1887

W. D. ALLEN MANUFACTURING CO.

CHICAGO 6 • NEW YORK 7

(Continued from bottom of page 159)

Heat Loss Calculator



This quick, easily operated heat loss calculator is designed especially for dealers in residential heating equipment. The Climatemaker eliminates the drudgery, guessing and expense of heat loss calculating with complicated reference books and charts. Saving 11 steps in figuring heat loss, some of the answers the device gives include: (1) Btu loss for each room, plus total loss from house; (2) Cfm requirements for forced warm air heating units; (3) square ft. of steam or hot water radiation required to heat each room; (4) pipe area; pipe, stack and blower size for forced warm air heating systems, etc.

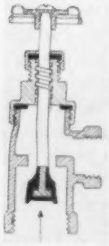
Manufacturer: Climatemaker Heat Loss Calculator Co., Box 378, Bloomington, Ill.

Centrifugal Water System

This new type of water system, identified as the Deming Fig. 6612 "Cushionette," is designed for wells with a suction lift of 20 ft or less. A unique feature of the system is the heavy rubber air-cushion tube located inside the tank which, when inflated to 25 lbs. pressure, completely fills the water compartment of the tank. When the pump starts to operate, water enters the water chamber and compresses the air in the tube until shut-off pressure is reached. When a faucet is opened, pressure of the air tube on the water forces the water through the house lines. When the pressure drops to 20 pounds, the pump starts to operate again—a cycle that is continuous and completely automatic. The two-stage, vertical, centrifugal pump is self-priming, and its compact construction makes it particularly suitable for small homes and cottages where it may be located under a kitchen sink, or in a similar restricted area. The system has a capacitor-type, ball bearing motor of ⅓ hp, single phase, 115-230 volt, 3450 rpm with a built-in thematron for overload protection. Capacities range from 318 to 684 gal.

Manufacturer: The Deming Company, Salem, Ohio.

Valve Seal



Operation of the new Rand valve seal, announced recently by the Rodic Chemical and Rubber Corporation, is based on working with, rather than against, the fluid flow. The cone-shaped seal is closed in the same direction as the movement of the liquid, allowing high or low pressures to seal the valve. The cup-shaped conical washer of the unit incorporates an imbedded metal plug which eliminates bending and warping and makes the seal leakproof. If the contaminants in the fluid, such as sand or grit, are not pushed ahead of one sealing line con-

(Please turn to top of page 162)

For Today's Best Value

COMPARE

✓ FEATURES
✓ PERFORMANCE
✓ REPUTATION
✓ SALES HELP

NOW
DELAYED ACTION OIL VALVE

Standard on Series 'S' Models. Also available on all other Sun-Ray Models.

and you'll settle on

SUN-RAY
FULLY AUTOMATIC
OIL BURNERS

Because they are built by one of the world's oldest and leading oil burner manufacturers.

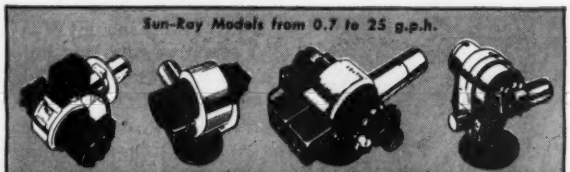
Because they are endorsed and specified by architects, engineers, builders, realty managers, Federal, State and City departments everywhere.

Because they are used by banks, schools, churches, institutions, apartment houses, commercial buildings and thousands and thousands of satisfied home owners to whom operation of Sun-Ray burners has meant years of carefree, economical heating.

Because with our sales literature, newspaper mats, displays and signs we help you sell more Sun-Ray Burners more profitably.

Inquiries Invited from Furnace and Boiler Manufacturers

Sun-Ray Models from 0.7 to 25 g.p.h.



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for RADIANT BASEBOARD HEATING

***because:* WHEREVER YOU ARE WHATEVER YOUR WEATHER BE IT BIG JOB OR SMALL**

KRITZER gives you every fact you need

. . . to sell, design and install radiant baseboard heating — in its new engineering manual No. 50-CE. Easy to read and follow this "Tell-All" book contains the only reliable certified ratings for every installation. They are both laboratory and job tested and proven.

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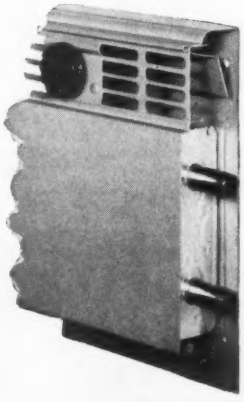
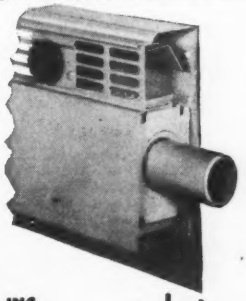
. . . for simple, swift installation of radiant baseboard heating, whatever job requirements. Best of all it's easy to select, order and stock. Kritzer engineering means the smallest number of parts for any given job.

See your Jobber for Kritzer Radiant Coils.





KRITZER RADIANT COILS, INC.
2901 W. Lawrence Ave., Chicago 25, Ill.

Here's Your First Step on the Road to Profits with Kritzer Radiant Baseboard Heating.

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☐ Rush my free copy of Manual 50-CE.
☐ Have a salesman call.

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IF IT'S KRITZER IT'S RIGHT, SIR!!

TURNER
80th ANNIVERSARY LINE
QUALITY SINCE 1871

No. 30-AT

No. 206-A

No. 39-A

No. 92-A

No. 59 Gasoline
No. 60 Alcohol

● Turner's complete line of blow torches . . . from the top-quality Double-Jet burner to a handy little half-pint model for the home craftsman . . . gives you a range of torches ideally suited for every use and in every price classification. Several models feature Turner's exclusive "Carburetor Control" . . . each one is built to exacting specifications for quality and performance . . . each one is actually burn-tested before final check-out at the factory. Again this year — as in the past — you can look to Turner's 80th Anniversary line of torches (and fire pots, too) for the acknowledged product leadership that wins money-making sales and satisfied customers for *you!*

See Your Jobber

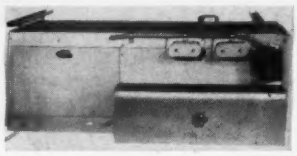
THE TURNER BRASS WORKS
STEAMER ILLINOIS
Since 1871

(Continued from bottom of page 160)

tact, the conical shape of the seal provides the establishment of a new line contact without damage to the bore. The rubber member of the seal is specially compounded to withstand oil, grease, steam, water, and most industrial chemicals.

Manufacturer: Rodic Chemical Corp. & Rubber, Allen Ave., New Brunswick, N. J.

Automatic Gas-Fired Furnace Line



A new automatic gas-fired horizontal-type furnace, recently added to the manufacturer's line of home heating products, is available in three models with input capacities of 60,000, 80,000 and 100,000 Btu per hour. It can be used with natural, manufactured or LP gas. A packaged unit, it is shipped completely assembled, with all accessories and controls except the thermostat, mounted and electric wiring and gas piping completed to casing outlets. Installation can be made under the floor, in an attic, in basement, or the unit can be suspended in a utility or furnace room. Additional features are an all-welded heavy gage steel heat exchanger, milled slot burners with single screw air adjustment which prevents clogging and assures instantaneous ignition.

Manufacturer: Airtemp Div., Chrysler Corp., Dayton, Ohio.

Finned Heating Units

Known as Airfoil Finned Radiation, three recently announced types of extended surface heating units have been designed for use with both hot water and steam heating systems. The units utilize a finned heating element which assures maximum heat transfer and convection of the air which passes between the fins. Three types now available are: AFR-1, consisting of 1 in. copper tubing with 3¼ by 3¼ in. aluminum fins; AFR-2, with 1¼ in. standard steel pipe with 3 by 4 in. steel fins; and AFR-3, consisting of 2 in. standard steel pipe fitted with 4 by 4 in. steel fins. All types have 3 in. extensions on each end and may be used singly or in tiered installations.

Manufacturer: Radiant-Ray Radiation, Inc., New Britain, Conn.

Freezer Thermometer

This new remote-reading freezer thermometer, mounted outside at eye level or any location near a freezer that is convenient for frequent checking, provides an easy way to keep check on freezer temperatures. A blue and white zone-type scale permits instant reading. A sensitive capillary bulb hangs inside of the freezer and is connected with thermometer unit outside by means of a small capillary tube which rests on edge of opening and does not prevent closing.

Manufacturer: Fee and Stemwedel, Inc., 2210 Wabansia, Chicago 47.

(Please turn to top of page 165)

REED

REMOVABLE HEAD, SELF-FEEDING RATCHET THREADERS

No pushing! Patented, double-threaded throat leads die onto pipe without effort.

Cut pipe threads cleaner, better, with less time and less effort. Use REED Threaders with these modern features.

Self-starting, easy-cutting dies.

Exclusive, double-pawl ratchet . . . cuts lost motion in half.

Positive-locking, quick-change heads . . . will not drop out.

Ask your Jobber or write for descriptive circular.

Convenient carrier supplied with sets of 3 or more heads.

Remember*—In a vise or pipe tool, if it's a *REED* . . . it's *RIGHT!

PIPE VISES AND STANDS · MACHINISTS' VISES · REAMERS · CUTTERS

REED MANUFACTURING COMPANY

TRADEMARK

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APCO
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APCO CAST STAPLE IRON Fittings, too!
First cousins to Apco Cast Iron Soil Pipe are "Stringer System" and "Apco" fittings of the same breed—*Quality*. They save space and prevent need of cutting joists. Accurate tappings; uniform tolerances, and highest standards otherwise. In Apco there's a shape for every purpose, an answer to every fitting problem, and a fitting for every code!
District Sales Offices in New York, Chicago, San Francisco, Portland, Los Angeles, Kansas City, Seattle and Denver.
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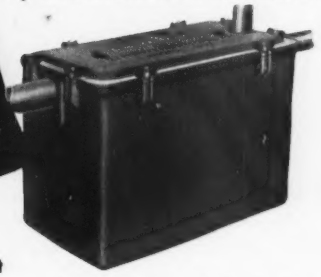
General Sales Offices: Anniston, Ala.

YOU MUST KNOW

It's Harder To Pass Independent Laboratory Tests than Tests Established By Manufacturers Standards

MURCO GREASE TRAPS . . . Have Always Been Tested By Independent Laboratories!



The efficiency ratings claimed for MURCO Grease Traps are not factory ratings . . . they are ratings established by independent laboratories after the most rigid methods of testing and approval. You can be sure of MURCO efficiency. Where a dependable grease trap is needed, make MURCO your choice.

No grease trap is simpler in construction . . . in design than MURCO Grease Traps. In them there are no complicated baffles . . . no cascades to clog up . . . no moving parts to replace or maintain . . . their simple design and construction means full efficiency in all MURCO Grease Traps . . . backed by years of experience and in use in thousands of installations.

Write today for the latest catalog . . . order from your wholesaler.

D. J. MURRAY MANUFACTURING CO. WAUSAU WISCONSIN

MANUFACTURERS SINCE 1883

Profit with Hudee!

HUDEE Ideal SINK FRAME SYSTEM

pat. 2,440,741

EASY TO SELL! EASY TO INSTALL!

A GREAT LEADER FOR SINK TOP AND SINK CABINET INSTALLATIONS

Here's real dollar and "sense" profit for you! While Hudee's features (100% Watertight—100% Sanitary—Easy to Install) make it the finest sink frame in the world—"Profit-wise" your advantages increase 4 ways: *(PROFIT 1)* Hudee, being the finest sink frame, is easier to sell—and you sell more frames. *(PROFIT 2)* Hudee makes a great leader for increased sales of sink top, sink cabinet, and complete kitchen installations. *(PROFIT 3)* Because they are easy to install on the job or in the shop—no rabbeting, no scribing, no special tools—you save on installation costs. *(PROFIT 4)* Complaints, call backs, and replacements are practically eliminated—satisfied customers mean more business. You can *Confidently Guarantee* every installation with Hudee. And they can be used with any top covering material—linoleum, rubber, or plastic. Hudee Frames are installed after all top covering has been applied, and the bowl may be removed at any time without damage to the top covering. Make Hudee YOUR Sink Frame System and profit "ALL-WAYS."

100% WATERTIGHT 100% SANITARY

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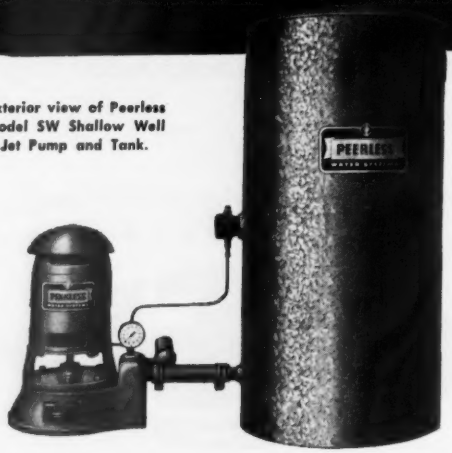
IN CANADA—WALTER E. SELCK AND CO. LTD.—TORONTO

THIS UNEXCELLED

SHALLOW WELL JET

IS ONE OF THE COMPLETE LINE OF PEERLESS WATER SYSTEMS



Exterior view of Peerless Model SW Shallow Well Jet Pump and Tank.

The Self-Priming Jet

FOR SHALLOW WELL WATER SYSTEMS

The Peerless self-priming jet system for shallow wells is unsurpassed for economy, performance and simplicity. Easiest of all water systems to understand, install and operate. Finest mechanical design; nothing in the well to get out of order. It is priced right, it is backed up by national advertising and merchandising and offers adequate profits. There's a big market for water systems. Cash in on it with the Peerless shallow well jet and other pumps in the complete Peerless line.

Write today for full details.

CAPACITIES: Up to 850 gals. per hour

LIFTS: Up to 20 feet

PRESSURES: To 50 lbs. or more

DRIVES: ¼ to ½ h.p.

PEERLESS PUMP DIVISION

FOOD MACHINERY AND CHEMICAL CORPORATION

Factories: Los Angeles, California • Indianapolis, Indiana

Offices: New York; Atlanta; Dallas; Fresno; Los Angeles; Chicago; St. Louis; Phoenix; Plainview, Lubbock, Texas.

fmc PEERLESS PUMPS

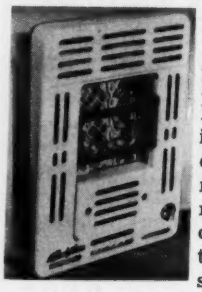
FILL ALL YOUR CUSTOMERS' NEEDS WITH

PEERLESS WATER SYSTEMS

THE COMPLETE LINE

(Continued from bottom of page 162)

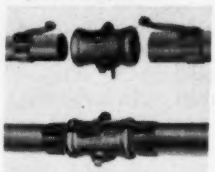
Gas Fired Wall Heater



Newest addition to the Perfection Stove Company gas heater line is an unvented gas wall heater with an output of 10,000 Btu. The RW-10, designed for use in small areas such as bathrooms, dens, washrooms, etc., has three radiants that produce instant radiant and circulating heat. A constant flow of cool air through the lower louvers insulates the sides and back so that the wall never gets hot. A self-locking gas valve is insurance against gas being turned on accidentally. This heater, with a white porcelain enameled heavy gage steel casing, is easy to install in the walls of new or existing structures.

Manufacturer: Perfection Stove Co., 7609 Platt Ave., Cleveland 4.

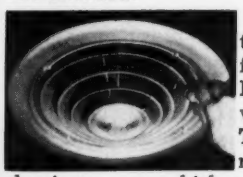
Pipe Coupler



The manufacturer recently announced the perfection of new quick-locking coupler equipment which speeds and simplifies the setting up, moving and maintaining of portable construction and industrial pipe lines. Capable of handling both air and water under pressure, each coupler is provided with easy-access outlets for connecting air lines, lateral hoses, etc., for running hose and other lines. The unit works as efficiently for oil or gas lines, chemical or fuel oils, as it does for air and water at high pressures. Safe, positive, blow-out-proof sealing is assured by a gasket furnished in either rubber or Neoprene. One of two styles of gaskets presents a self-draining feature, especially important when lines are moved frequently. The aluminum alloy coupler is made for plain end pipe, provides a positive manual lock and is capable of handling up to 300 lbs per sq in. operating pressure.

Manufacturer: R. M. Wade & Co., Portland, Ore.

Air Diffuser



Reported to be an innovation in the field, the air diffuser introduced by Universal Diffuser Corporation has a variable area of effectiveness. The Flexiflo consists of two main parts: An outside spun aluminum cone which acts as a finishing ring, and a diffuser consisting of a conical spiral in which the continuous blades are elastically held together with radial spokes. The spiral is centrally connected to a cross bar by means of a threaded rod. By turning this rod, the blades can be shifted to any position, up or down, from closed to wide open, thus providing adjustment of the effective area. They are designed so that the air pattern will always remain constant. The unit may be adjusted after it has been set in place and may be rotated to any angle after installation.

Manufacturer: Universal Diffuser Corp., 890 Whittier St., New York 59.

(Please turn to top of page 166)

CONTINENTAL

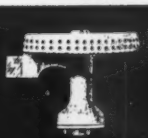
GAS *water heaters*

with **TWO**

royal subjects

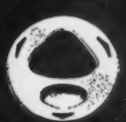
Continental's royal performance is crowned with slim, space-saving beauty fit for a queen. This complete line of gas water heaters is designed to give economy, efficiency, and reliability. Two exclusive Continental ROYAL SUBJECTS assure customer satisfaction:

GLADIATOR



1

Exclusive Mushroom Burner operates automatically. Ninety six side ports heat water faster but cannot clog. This burner gives remarkable recovery with maximum economy.



2

Built-in Condensation Sump in the floor pan of the heater catches all moisture. No water escapes to the floor. Continental is the perfect "housebroken" gas water heater. Sold through leading plumbing wholesalers.

Write for illustrated catalog

NATIONAL STEEL CONSTRUCTION CO.
500 MYRTLE STREET, SEATTLE 8, WASHINGTON
301 WATER STREET, LOGANSPORT, INDIANA

CONTINENTAL WATER HEATER CO.
1801 PASADENA AVE., LOS ANGELES 31, CALIF.
ALSO MANUFACTURERS OF OIL FIRED WATER HEATERS • RANGE BOILERS
HYDRO-PNEUMATIC TANKS • WATER STORAGE TANKS

OT* SERVICEMAN SAYS —

"One look and I can tell whether the unit is arranged for one pipe or two pipe system!

"There's nothing like engineering a product for the convenience of a serviceman. Here's an example of what I mean—Webster Electric Fuel Units are so marked that I can take one look and I know if it is arranged for a one-pipe or two-pipe system. Not guess work. There it is—you know where you stand at a glance. That's why I specify Webster Electric. I feel their units have been designed with me in mind. Try them—you'll see what I mean."

*Old Timer

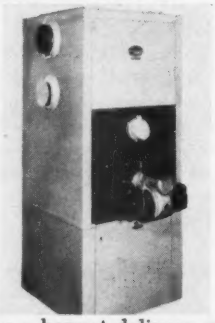
An identical unit is made for sale in Canada by Canadian Acme Screw & Gear, Ltd. of Toronto, under license by Webster Electric Company, Racine, Wis. Established 1909.

WEBSTER ELECTRIC
RACINE • WISCONSIN

Where Quality is a Responsibility and Fair Dealing an Obligation

(Continued from bottom of page 165)

A New Furnace

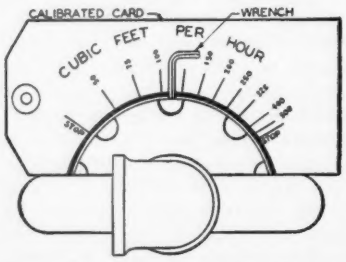


This new Halco Du-All gas or oil furnace may be installed 7 different ways: 1) As an oil-fired Hi-Boy (shown here); 2) a gas-fired Hi-Boy; 3) an oil-fired Counter-Flo; 4) a gas-fired Counter-Flo; 5) on oil-fired basement Lo-Boy; 6) a gas-fired basement Lo-Boy; 7) or as an oil-fired suspended unit.

Highly efficient, the unit has a bonnet delivery of 120,000 Btu with either gas or oil. When the furnace is used as a Hi-Boy, the filters may be located on any of three sides, with a special rack underneath for a bottom inlet; as a Counter-flo furnace with perimeter or crawl-space heating, the blower is assembled on top of the unit; and when installed as a basement model, the blower compartment is placed alongside the furnace. In the suspended position, the unit is oil-fired only and the blower compartment may be assembled at either end. The furnace measures 30 in. deep, 30 in. wide and 71 in. high in the Hi-Boy or Counter-Flo position, 48 in. high as a basement model.

Manufacturer: Hall-Neal Furnace Co., Indianapolis.

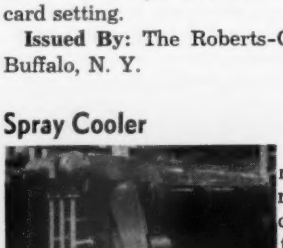
Orifice Adjustment Guide



The Roberts-Gordon Appliance Corporation has recently issued a card as an aid to installers in quickly adjusting the patented Iris Orifice for required gas input. Shipped with each unit is a double tag—one half devoted to the diagrammatic instructions; the other half to a calibrated card titled "Cubic Feet Per Hour." To adjust the input, the card is placed between the bell and the wrench so that the calibrated curve matches the air shutter. The wrench is then moved to the input desired. The result is a quick, approximate setting which saves considerable time. A chart is provided on the reverse side of the card to compute the input after timing the revolution of the test hand on the meter as a check on the calibrated card setting.

Issued By: The Roberts-Gordon Appliance Corp., Buffalo, N. Y.

Spray Cooler

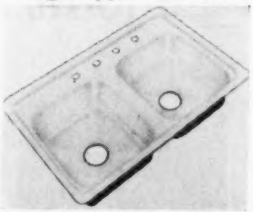


The manufacturer announces an improved model "No Frost" spray cooler for the refrigeration and refrigerated storage of products that are sensitive to the moisture content of the air, such as foods which are

liable to dry out, shrink or discolor in cold dry air. Entering through fans, the air is blown through the units where it passes over refrigeration coils and through a spray of liquid solution which prevents the condensation of water and the formation of ice or frost on the coils. The chilled air, which may be as low as minus 20 deg F., passes directly from the spray chamber into the room, thereby containing no reheat from the energy of the fans and making available higher humidity air. With no loss of cooling capacity from accumulation of frost on the refrigerating coils, no interruption for defrosting and no reheat added to the air, a closer control of conditions is obtained.

Manufacturer: Niagara Blower Co., 405 Lexington Ave., New York 17.

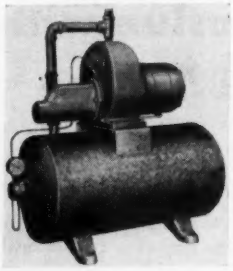
Ledge Type Sink with Twin Bowls



The U. S. Porcelain Enamel Company has just introduced a double sink with a faucet ledge. Known as Model S-8, the new sink has a deep bowl capacity with straight sides of pressed steel and finished in triple coated porcelain enamel. Measuring 32 by 21 by 7 3/16 in. with 1½ in. radius corners, the sink has twin bowls and is provided with four holes for faucet fittings.

Manufacturer: U. S. Porcelain Enamel Co., 4635 East 52nd, Los Angeles 22.

Complete Water System



A new, completely assembled water system, utilizing the manufacturer's horizontal jet pump, was recently added to the Delco Appliance line. The jet pump is assembled on a 12-gal. horizontal galvanized steel pressure tank. Made operative by connecting suction and discharge lines as well as the usual electrical connections, the unit can be operated on either 110- or 20-v, 60-cycle current. The pump is available in ⅓ and ½ hp sizes, and the complete unit includes a motor with built-in overload protection, automatic air volume control, automatic 20 to 40 lb pressure switch, and a non-slam type, self-loading foot valve with spiral strainer or check valve as required. Capacities range from 480 to 990 gph at 20 lbs pressure within the shallow well range. The unit, intended for small suburban homes and similiar installations, is easily converted from shallow to deep well operation.

Manufacturer: Delco Appliance Div., General Motors Corp., Rochester 1, N. Y.

Gas Fired Water Heater

A fast recovery, heavy duty, booster type gas water heater, intended for the large user of hot water has recently been announced by the manufacturer. The unit, which may be connected directly to the fixtures or used as a booster with a large storage tank, employs a single orifice burner with

(Please turn to top of page 169)

OT* SERVICEMAN SAYS—

"Ample outlets—

I can bring my wires in conveniently!

"It's sure grand not to have to worry about bringing wires into a Webster Electric transformer. I know from the start that I can handle practically any type of condition, so I don't worry about it—I just specify Webster Electric transformers. Here's another thing—The opening is large enough so that I can easily reach in and make all my connections without being in cramped quarters. Try them—you'll never use any other."

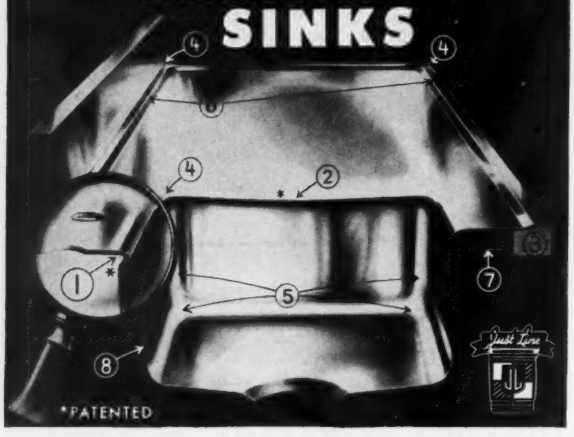
*Old Timer

Webster Electric Company, Racine, Wisconsin. Established 1909.

WEBSTER ELECTRIC
RACINE • WISCONSIN

"Where Quality is a Responsibility and Fair Dealing an Obligation"

8 Good Reasons why Leading Plumbing Contractors Recommend Just Line Radiiluxe STAINLESS STEEL SINKS



1★ *Patented* Anti-splash Rim around entire perimeter of the bowl at point where bowl joins the drainboards, seamless welded and polished.

2 ★*Patented* Double Pitched Drainboards, gradually sloping lengthwise to the bowl and sidewise to center of drainboard.

3 Wood Frame around front and ends, facilitates fastening to the cabinets.

4 Seamless Construction, all joints welded and polished.

5 Radius corners in bowl—vertical radius 1½" at top tapering to 15/16" at bottom, all bottom horizontal radii are 15/16".

6 All corners of raised edge are die drawn.

7 U-type structural channel extending the full length of the drainboards.

8 Sound Deadened on the underside to prevent undesirable metallic sound.

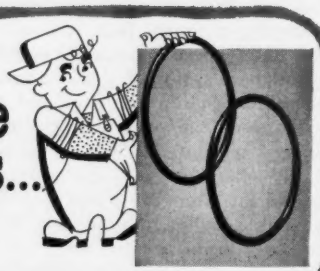
Radiiluxe Sinks can be supplied in any size and shape and with either one, two or more sink bowls—to meet individual requirements.

Just Line Sinks are sold Nationally through Plumbing Wholesalers.

Contact Your local Jobber or write us direct for Illustrated Literature and Estimates.

Just Manufacturing Co.
4610-20 W. 21st Street, Chicago 50, Illinois

These are the rings...



that seal the joint...

that keeps roots out...

. . . exclusive with TRANSITE, the White Pipe

THE Ring-Tite Coupling, consisting of a Transite sleeve and two rubber sealing rings, is Johns-Manville's "packaged" joint engineered to prevent root-clogged house sewer lines.

It's one of many advantages that are exclusive with Transite*, the easy-to-install *white pipe* that assures a dependable, trouble-free installation.

For full details about Transite House Connection Pipe and the complete line of fittings, write for Brochure TR-82A. Address Johns-Manville, Box 290, New York 16, N. Y.

*Reg. U. S. Pat. Off.

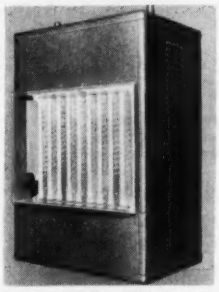
TRANSITE
The White
HOUSE CONNECTION PIPE
Made by Johns-Manville

(Continued from bottom of page 167)

all parts located outside. The heater's refractory lined combustion chamber is jacketed with a water leg which extends to the floor. The water leg is three in. thick in order to permit ample area for the collection of sediment and lime deposits. Two models provide an input of 110,000 up to 180,000 Btu per hr, from 22 to 32 sq ft of heating surface and both have a working pressure of 127 psi.

Manufacturer: Bock Corp., 110 S. Dickinson, Madison, Wis.

Line of Duct Furnaces



A new line of duct furnaces, designed for use in installations where the air supply and pressure originate at a source removed from the unit, has been announced by Automatic Gas Equipment Company. Known as Pittsburgh Duct Furnaces, they are ideal for use in air-conditioning installations where the air ducts are already in place. The basic unit is the same as standard Pittsburgh gas unit heaters and, as in the latter case, is equipped with a durable cast iron heat exchanger and combustion chamber to withstand the corrosive effects of burning gases and moisture. A built-in draft hood absorbs all excessive chimney action and thereby conserves heat. The units are supplied in sizes from 12,000 Btu input to 200,000 Btu input per hour and are shipped completely assembled with controls and built-in draft diverter.

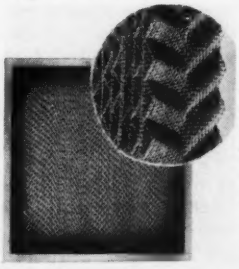
Manufacturer: Automatic Gas Equipment Co., 304 Brushton Ave., Pittsburgh 21.

Heat-Resistant Paint

The Illinois Bronze Powder Company recently announced the formulation of Hi-Temp, a new aluminum paint for withstanding extreme heat as high as 1200 deg F. Specially formulated of chemically-pure aluminum powders in a newly developed patented vehicle, the new paint insures lasting protection against peeling, discoloring, blistering and all other problems caused by extreme heat. It is recommended for numerous home and industrial uses including furnace fronts, boilers, ovens, smoke stacks, steam pipes, etc.

Manufacturer: Illinois Bronze Powder Co., 2023 S. Clark St., Chicago.

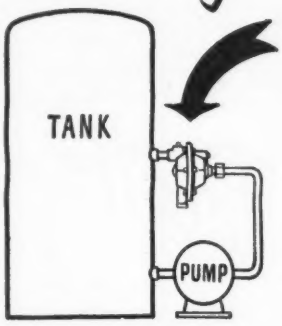
High Velocity Air Filter

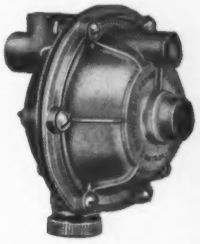


A new high velocity air filter, the Airsan Viro-Crimp, has just been introduced by the Air Filter Corp. Specially designed, this filter will operate at 300 to 500 fpm with minimum resistance and constant high efficiency. Its core is of the viscous type and is constructed of horizontal layers

(Please turn to top of page 170)

Brady AIR VOLUME CONTROL





Standard equipment on leading makes of ejector turbine, rotary and centrifugal water systems.

1,500,000 controls in service for several years. Many now need replacement or repairs.

REPLACEMENT CONTROLS AND REPAIR KITS AVAILABLE FROM YOUR PUMP SUPPLY HOUSE OR JOBBER

Model No.	Diam. for Identification	Max. Tank Size
AV-25-3A	3" diameter (4-bolt)	42 gal.
AV-30-3A	3" diameter (5-bolt)	42 gal.
AV-42-3A	3 11/16" diameter	70 gal.
AV-80-3A	3 7/8" diameter	120 gal.
AV-120-3A	5 1/2" diameter	220 gal.

WRITE FOR LATEST BULLETIN

Brady Air Controls, Inc. 1406 EAST 18th STREET MUNCIE • INDIANA

ALLCRAFT AUTOMATIC GAS WATER HEATERS HAVE PURE SOLID COPPER TANKS

ALLCRAFT TANKS WITHSTAND TREMENDOUS HEAT . . . DO NOT RUST OR DETERIORATE . . GIVE HOTTER HOT WATER

The pure copper tank has been manufactured by a special and exclusive Allcraft process and individually tested to 300 lbs hydrostatic pressure. It cannot rust or deteriorate and there is a ten year warranty on the tank.

Every desirable feature known in the manufacture of gas water heaters is embodied in each Allcraft unit including completely automatic operation, AGA approved Robertshaw Unitrol, drain valve at bottom of tank, non-absorbent spun Fiberglas: Insulation and a dozen others.

SEE YOUR PLUMBING CONTRACTOR TODAY!

You recommend, stock and sell the finest gas water heater made in America today when you handle Allcraft.

ALLCRAFT MANUFACTURING COMPANY, INC.
27 Hayward St., Cambridge, Mass.

100% Automatic safety

this means
Profits
Koven
• 350 lb. test tank thoroughly galvanized by hot-dipped process
• Easily adapted for any type of gas used.
• Robertshaw Unitrol controls
• Smart-streamlined looks plus sturdy construction
• Low cost—abundant hot water

automatic
gas water heaters
by Koven

KOVEN really turned this water heater into a money-maker by equipping it with every advantage your customers demand. You can see why plumbers, among the best judges of water heaters, say, "a KOVEN offers no servicing problem because it's built for efficiency". And Architects and Builders back it up with praise for KOVEN's advanced design and precision engineering. Of course, the best proof is in the profit. So why not get your share by recommending this best seller today. It's liberally guaranteed.

NATIONALLY ADVERTISED. Write us for valuable literature that will help you turn sales points into sales.

L. O. KOVEN & BRO., INC.
154 Ogden Ave., Jersey City 7, N. J.
Plants: Jersey City, N. J. • Dover, N. J.

(Continued from bottom of page 169)

of galvanized wire mesh arranged to assure a large filter area with no appreciable pressure drop. The unit has no direct opening in the media, reportedly providing peak efficiency, large dust holding capacity and uniform leading. Because of the Viro-Crimp feature, the air flows into divided channels baffled by a filter wall. The filter's edges are hemmed, a safety feature that provides smooth surfaces, permits easy handling for servicing and eliminates the possibility of cuts and scratches. Easily cleaned, the unit is provided with drain slots to hasten drying and aid the cleaning process.

Manufacturer: Air Filter Corp., 108 N. Water St., Milwaukee 2.

New Literature

Ventilating Fan Manual

A new informative manual called "A, B, C's of Ventilating Fans" has been produced by NuTone, Inc. for use by contractors. Plenty of illustrations and factual descriptive material point out why ventilation is important in every room of the house. Features, specifications and installation data for NuTone ventilating fans are presented in trade language.

Issued by: NuTone, Inc., Cincinnati, 27.

Horizontal Jet Pump Bulletin

A new bulletin describing a complete line of horizontal jet pumps for deep and shallow wells has just been published by the Everite Pump and Manufacturing Company. Easy to read and easy to sell from, Bulletin 300:2 includes information on the complete package units, basic jet pumps and a new line of small package systems. A listing of all jet assembly packages to fit the basic pumps can be found in the bulletin along with specifications and rating tables of the entire line.

Issued by: Everite Pump & Manufacturing Company, Lancaster, Pa.

Welding Review

This is the second pamphlet written to assist pipefitter welders who are required to take qualification tests under the ASME Boiler Code. This pamphlet gives the pipefitter a review of the oxyacetylene method. Written in plain, direct language, it is illustrated by clear line drawings. In the pamphlet the reader will find a step-by-step story of the test he is to take and the precautions he should employ to pass the test.

Issued by: National Certified Pipe Welding Bureau, Suite 1401, 1250 Avenue of the Americas, New York 20.

Air Filter Size Catalog

A catalog of air filter sizes for filter-equipped warm air furnaces and blower units has been published by the Owens-Corning Fiberglas Corporation. Included is an alphabetical listing of 166 manufacturers of forced warm air heating equipment. Listed under the name of each are the sizes and number of filters needed for units manufactured by the company and the manufacturer's identification numbers.

Issued by: Owens-Corning Fiberglas Corporation, Toledo 1.

Multi-Room Air Conditioner Bulletin

Design, selection and operating data on the new, larger OC (one circuit) budget UniTrane unit for multi-room air conditioning systems is featured in a bulletin just published by The Trane Company. The 40-page handbook includes data on both the budget OC-UniTrane system and the deluxe MC-UniTrane system, designed to provide individual room control of air conditioning in multi-room buildings. Contractors are provided with a step-by-step outline for laying out complete systems as well as installation and control data.

Issued by: The Trane Company, La Crosse, Wis.

Residential Humidifiers

Maid-O'-Mist, Inc. announces a new literature sales piece depicting the "Comfort-Economy Advantages" of residential humidification. Form No. 851, four pages in envelope stuffer size, lists sizes and capacities of the convector humidifier with complete description.

Issued by: Maid-O'-Mist, Inc., 3217 N. Pulaski Rd., Chicago 41.

Process Industries Catalog

The 1952 edition of "BS&B in the Process Industries" is just off the press. The 20 page, 2-color catalog is filled with illustrations and descriptive material on special fabrication services, immersed coil and direct fired heaters and bolted and welded steel tanks. An expanded section on control equipment includes diaphragm control valves, displacement type liquid level controllers, pressure controllers, drainers, self-operated and relay regulators, safety heads and pressure vacuum vent valves with flame arrestor units.

Issued by: Black, Sivalls & Bryson, Inc., 7500 E. 12th St., Kansas City 3.

Bellows Type Expansion Joints

A new catalog containing over 78,000 possible combinations of bellows type expansion joints has recently been published by the Solar Aircraft Company. This new 40 page catalog serves as a reference handbook and it illustrates a diversified line of standard and special bellows assemblies used to take up expansion, contraction and offset movement in pipes and conduits.

Issued by: Solar Aircraft Company, San Diego, Calif.

Hot Water Sanitizing Unit

The heating division of the A. O. Smith Corporation has prepared a new two-color bulletin on the Burkay 180 hot water sanitizing unit for use in small restaurants. The bulletin, No. HDH-1915, illustrates matching use of the "180" with the A. O. Smith Permaglas water heater to provide both general purpose and sanitizing hot water.

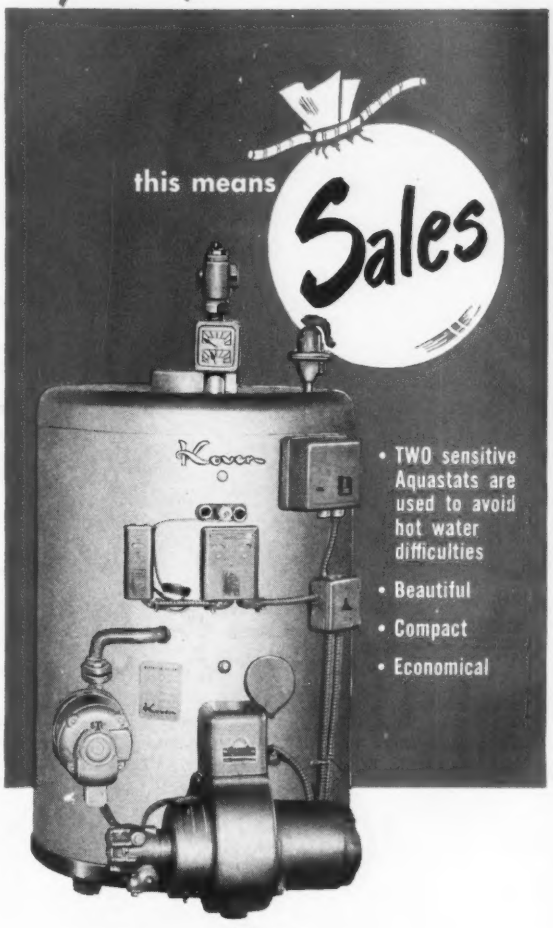
Issued by: A. O. Smith Corporation, Milwaukee.

Tool Catalog and Price Book

The Capewell Manufacturing Company has just completed an extensive and entirely new catalog and price book covering its line of hack saw blades, cutting band saws, band knives, pipe fitters' hand tools, pipe and bolt threading machines, hammers, etc. The entire catalog is prepared in loose leaf form and the

(Please turn to top of page 173)

FULLY WIRED AND EQUIPPED
for
Speedy installation



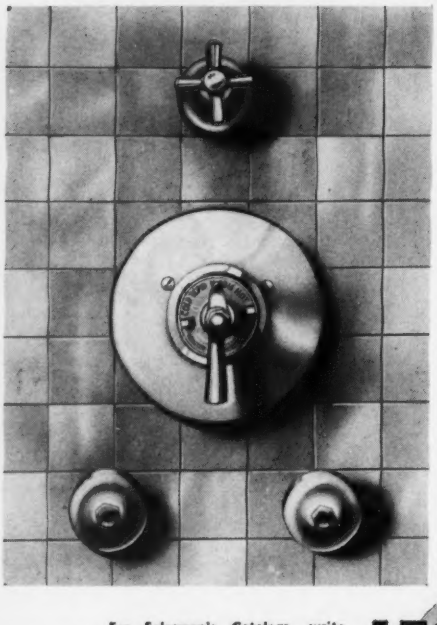
venko
packaged unit by
by Koven

This trim boiler has zoomed into popularity among small home owners. No wonder profit-wise installers are enthusiastic about KOVEN's Venko. Builders and Architects are also putting it high on their "recommended" list. You'll do the same once you realize VENKO's sales-pulling features.

NATIONALLY ADVERTISED. Help yourself to dramatic merchandising aids by dropping us a line today.

WATERFILM BOILERS, INC.
a division of L. O. KOVEN & BRO., INC.
154 Ogden Ave., Jersey City 7, N. J.
Plants: Jersey City, N. J. • Dover, N. J.

LEONARD SHOWER MIXING VALVE



The Standard of Excellence!

No other shower mixer offers all these features of the low cost LEONARD TYPE T.

- Durable bi-metal thermostatic coils maintain control over temperature *and* pressure fluctuations.
- Simplified Design: The one moving part is self-cleaning and is easily accessible from front of valve.
- Safety limits: By a simple pointer adjustment valve can be set for any desired maximum temperature.
- Separate volume control and shutoff enables the user to regulate the flow as well as the temperature.
- Equipped with two outlets—the regular top outlet for piping to shower head and a bottom outlet for piping to tub or body sprays.

For all shower work, in fact wherever water temperature is to be controlled, look to LEONARD. You will find a valve "Designed for the Installation."

For Salesmen's Catalogs, write for a supply of Catalog H Condensed (8½ x 11). Easy to use, complete information at their fingertips.

Representatives in Principal Cities.

LEONARD Thermostatic WATER MIXING VALVES

LEONARD VALVE COMPANY
1360 Elmwood Ave.
Cranston 7, R. I.

THE BARNES TOOL CO., NEW HAVEN, CONN.

Manufacturers
OF
GENUINE BARNES
Pipe Cutting Tools

★

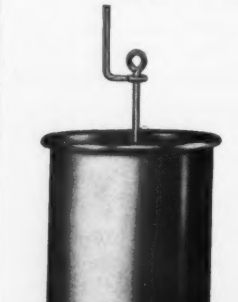
Extend Best Wishes
to Their Customers for

A Merry Christmas
AND A VERY
Prosperous but Peaceful New Year

★

GENUINE BARNES

The CURTIN
Special Valve
FOR ONE PIECE CLOSET COMBINATION!



This valve is adapted to fit the American-Standard One Piece Closet Combinations F-2000 and F-2005.

Replacement valves for this type of closet can usually be furnished from stock.

CURTIN VALVE Fig. 50

A. F. CURTIN VALVE CO.
76 SHIP AVENUE MEDFORD, MASS.

(Continued from bottom of page 171)

company makes available descriptive catalog and price sheets on any or all of the company lines.

Issued by: The Capewell Manufacturing Company, 60 Governor St., Hartford, Conn.

Damper and Shutter Brochure

Dampers and shutters for heating, air conditioning, ventilating and industrial applications are described in a brochure recently issued by the Minneapolis-Honeywell Regulator Company. The booklet, fully illustrated, also describes the company's line of motor operating units that accurately position dampers in response to temperature or pressure controllers.

Issued by: Merchandising Division, Minneapolis-Honeywell Regulator Company, Minneapolis 8.

Magnesia Insulation Bulletin

A new 2-color, 8-page bulletin just released by Ehret Magnesia Manufacturing Company, presents characteristics and advantages of the firm's Thermalite 85% Magnesia Insulation for covering pipe, fittings and equipment. Tables include recommended insulation thicknesses for various temperature ranges. Copy summarizes recommended application procedure and also other types of insulation.

Issued by: Ehret Magnesia Manufacturing Company, Valley Forge, Pa.

Gas Combustion Components Bulletin

Just off the press is a compact and comprehensive bulletin illustrating and describing the complete line of McKee-Eclipse burners, mixers, valves and blowers used in gas combustion for industrial purposes. One page is also devoted to gas and oil fired steam boilers and furnaces for the process industries. The pamphlet is designed to show the wide variety of the company's products, and the range of sizes in which each is obtainable.

Issued by: Eclipse Fuel Engineering Co., 1159 Buchanan St., Rockford, Ill.

Draft and Low Pressure Instruments

A new fully indexed bulletin on the Hays line of draft and low pressure instruments is now available. A two page application table is included to aid the reader in selecting the correct instrument for his conditions. Features such as calibrating springs, diaphragm units and differential valve assemblies are explained. Sizes, scales, ranges, cases, etc. of each instrument are illustrated and discussed. In addition, 14 types of draft and pressure, differential and other measuring elements are pictured.

Issued by: The Hays Corporation, Michigan City, Ind.

Electric Drinking Water Coolers

A new 8-page folder in two colors illustrates and gives general specifications for 12 models of the Oasis line of electric drinking water coolers. Models in the folder include: two bottle water coolers; two water coolers with freezing compartments; 5 gal., 10 gal. and 20 gal. capacity coolers; an air-sealed cooler protected against lint, dust and moisture infiltration, and an explosion proof water cooler.

Issued by: Ebco Manufacturing Co., Columbus, Ohio.

When You Think of
SOIL PIPE
think of
SANITARY
COMPANY
of
AMERICA

Cast Iron Soil Pipe and Soil Fittings · Plumbing Specialties and Grey Iron Castings

SANITARY COMPANY of AMERICA
Linfield, Pa.

Whatever you require write, phone or wire SANITARY COMPANY of AMERICA.

THE PEERLESS LINE
REVELATIONS

PEERLESS POTTERY INC.
EVANSVILLE, INDIANA

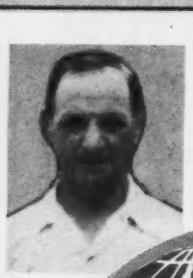
"Sales come a lot *EASIER* with White because you have features like

6.9% MORE HOT WATER

in the electric and

Film of Flame

in gas models."



SAYS MR. L. GIOLETTI
1904 MARCONI ST.
ST. LOUIS, MO.

White

WATER-HOTTER

You benefit directly from the extra hot water your customers get from *White* WATER-HOTTERS. With *White*, your sales come quicker, installations are easier, service after installation is practically *nil*—you enjoy a better deal all around! Write for *White's* Proved Profit Story—or call your *White* distributor TODAY!

Automatic WATER HEATERS... ELECTRIC AND GAS

Guaranteed by Good Housekeeping

Nationally Advertised!

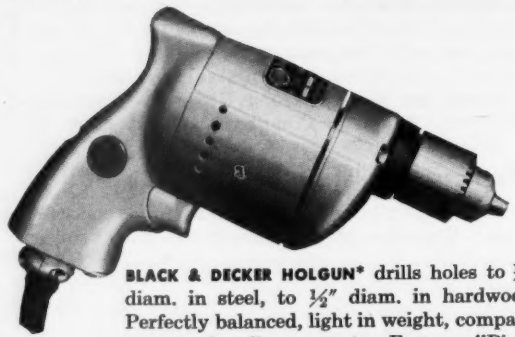
ELECTRIC—Round and table top models

GAS—Round models only

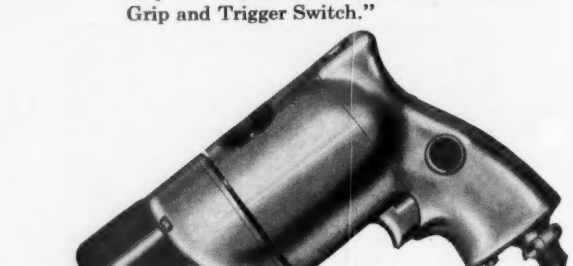
WHITE PRODUCTS CORPORATION
Dept. D-12, Middleville, Michigan
Water Heating Specialists Since 1930
EXPORT SALES DEPARTMENT: 201 N. Wells St., Chicago 5, Ill.
Patented Copyright 1951, White Products Corp.

Speed up Assembly!

Switch to BLACK & DECKER **POWER!**



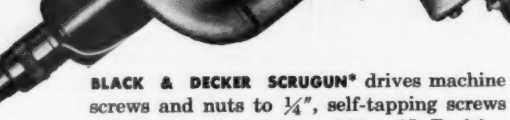
BLACK & DECKER HOLGUN* drills holes to ¼" diam. in steel, to ½" diam. in hardwood. Perfectly balanced, light in weight, compact, easy to handle, accurate. Famous "Pistol Grip and Trigger Switch."



BLACK & DECKER SCRUGUN* drives machine screws and nuts to ¼", self-tapping screws to #12, wood screws to #10 x 2". Positive or adjustable clutch available. Same design features as B&D HOLGUN!

SEE YOUR NEARBY B&D DISTRIBUTOR for demonstrations and full details on this famous team of assembly tools. They'll help your men turn out more work, with less fatigue and less spoilage. And you have nearly 50 other B&D Drill and Screw Driver models to choose from to fit your needs on heavier work! Write for free catalog to: THE BLACK & DECKER MFG. Co., 634 Pennsylvania Ave., Towson 4, Md.

*Trade Mark Reg. U. S. Pat. Off.



SHEARS SANDERS BENCH GRINDERS HAMMERS

LEADING DISTRIBUTORS EVERYWHERE SELL

B&D Black & Decker PORTABLE ELECTRIC TOOLS

Central Supply Meeting

(Continued from the bottom of page 109) Dr. Maryland B. Byrne emphasized the necessity of advertising the part our industry has played in the health and sanitation of our country. Dr. Byrne stressed the fact that this could only be done through the combined efforts of manufacturers, wholesalers and contractor-dealers.

In another report, Roy Wenslick, real estate analyst, discussed the housing trends over the past 60 years. He stated that, although there is a shortage of low-rent housing units, seven percent of other units were vacant during 1950. Also, Mr. Wenslick predicted a sliding decline in building in the coming months. This might be stemmed somewhat, he said, if the government allows banks and lending agencies to charge slightly higher interests on mortgages.

Other speakers at the convention included John Harkness, of A. T. Kearney & Co.; the Honorable Lowell B. Mason, Commissioner, Federal Trade Commission, and Senator Bourke B. Hickenlooper.

Newly elected officers are: President—C. L. (Tod) Wilkins, Wilkins Pipe & Supply Co., Peoria, Ill.; 1st V.P.—E. C. Garrity, Garrity Company, Chicago; 2nd V.P.—Charles G. Kretschmer, Kretschmer-Tredway Co., Dubuque, Iowa, and Treasurer—H. B. Holihan, Missouri Water & Steam Supply Co., St. Joseph, Mo.

Mid-Atlantic Meeting

(Continued from bottom of page 108)

riod, he felt that this was the only problem which might cloud an otherwise bright picture.

Ed Buxton of Bethlehem Steel, in discussing the pipe situation, pointed out that production today is running four percent higher than last year, which was an all-time high for the industry. Mr. Buxton stated that his company had been doing some experimenting in seeking a substitute for zinc for galvanizing and had recently struck upon "liquid stainless steel" as a possible solution to the problem.

Regarding the situation on steel and copper in general, consensus is that the picture isn't too good for the first three quarters of 1952. There just isn't enough to go around. The principal problem today, especially with copper, is that of obtaining raw materials and while the industry is doing all it can to increase production capacity, it will be some time before the efforts are noted in more finished products.

Bill Brecht of Hajoca Corporation gave an inspiring talk on the American Institute of Wholesale Plumbing and Heating Supply Assn. Tracing the history of various organizations through the years, Mr. Brecht pointed out the need, which he feels is necessary at this time, for a combined association of regional groups in order that they have national recognition for a wholesale plumbing and heating industry.

Mr. Brecht was honored with a scroll which expressed appreciation for his many years in endeavoring to better the industry.

Following the second day's meeting, the following new officers were elected for the coming year: C. C. Lowry of Hajoca Corp. as president; Wm. A. Barker of Belfield Supply as first vice president; John A. McCann of Seashore Supply as second vice president and Raymond C. Green as treasurer.

SHOWER SAFETY

. . . No scalds . . . no chills. Protects against *both* sudden scalds *and* chills. Even with pressure fluctuations up to 85%, *Safetymix* keeps shower temperature constant. Automatically shuts down flow when either hot or cold water fails.

LIFETIME QUALITY

. . . Only one moving part. Designed and manufactured by engineers and approved by architects, pressure-actuated *Safetymix* is the most rugged shower control valve made. Only *Safetymix* has the patented Flow Control Spindle with but one moving part to control *all* valve functions.

FREE FROM MAINTENANCE

. . . Easy to fix as a faucet. Safetymix is designed with self-cleaning action to prevent clogging. Saves water. All parts accessible from front.

COSTS NO MORE

Because it costs no more than ordinary shower valves and is guaranteed to be entirely as represented, architects specify Safetymix and engineers recommend it. Safetymix gives the extra safety and satisfaction that builds better reputations. Safetymix is used in thousands of schools, colleges, hotels, industrial plants, institutions and better homes from coast to coast.

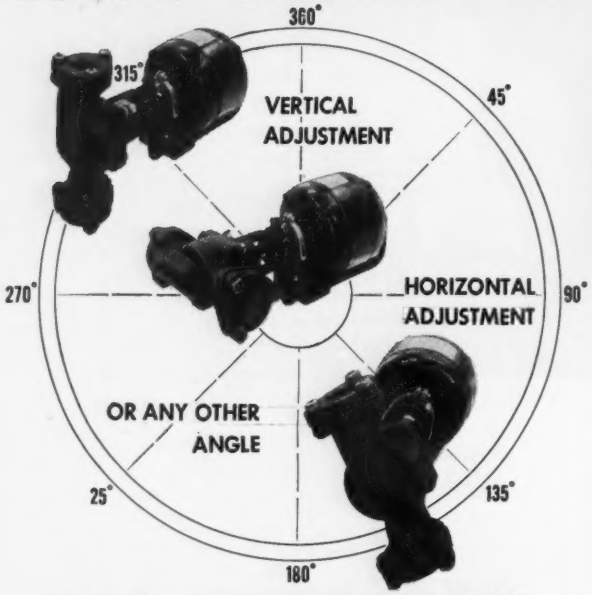
See Sweets Architectural File or your Domestic Engineering Catalog.

Send for bulletin and prices.

Symmons
ENGINEERING COMPANY
791 TREMONT STREET, BOSTON, MASS.

LOOK to... Econo for MORE

ECONO CIRCULATORS



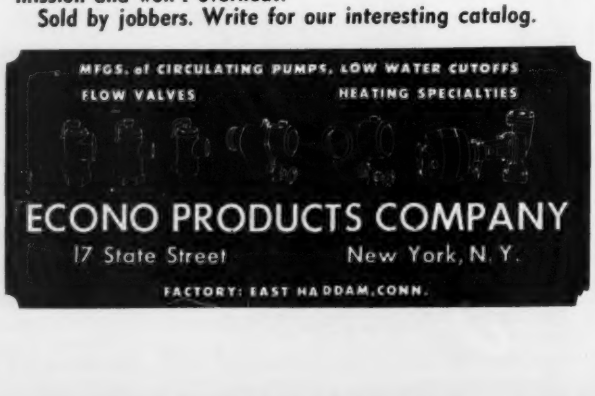
WHY 4 OPERATIONS INSTEAD OF 1?

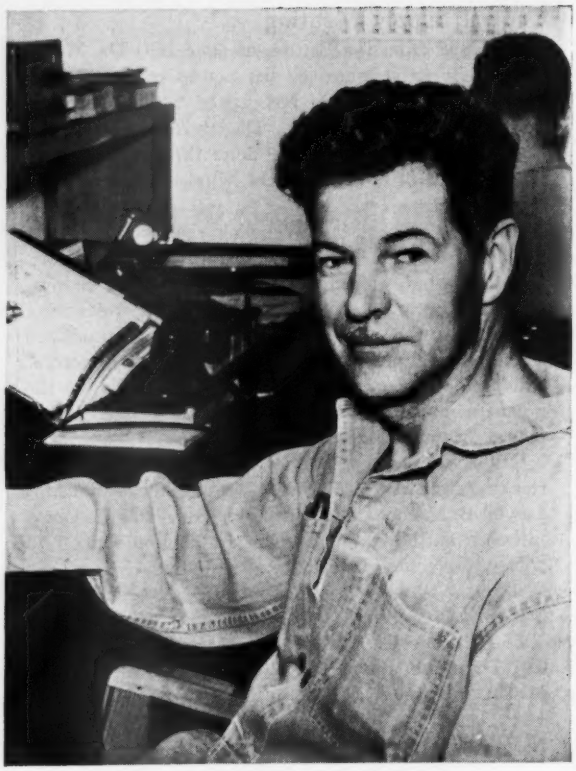
Why perform four operations when only one is needed with an Econo Hot Water Circulator? Think of the time, the energy and the work you could save in adjusting an Econo Circulator for the flow wanted.

To adjust an Econo at any point on a 360° adjustment nothing need be taken apart, no bolts removed, no gasket removed and replaced.

Moreover, it sustains head pressure, reduces noise transmission and won't overheat.

Sold by jobbers. Write for our interesting catalog.





Motor Repair Shop Owner Finds KLIXON Protectors Insure Against Burnouts

SO. HARWICH, MASS.: Mr. Alfred LaMontagne, owner of the Cape Cod Electric Motor Service knows what he's talking about when he praises KLIXON Protectors. More than 200 motors pass through his shop every month.

"In my ten years of experience with electric motors, I've found that KLIXON Protectors save our customers unnecessary repairs. They're tamper-proof . . . and the lowest cost insurance against motor burnouts that you can get."

KLIXON Protectors Build Customer Goodwill by Preventing Major Repair Costs

The KLIXON Protectors illustrated are built into the motor by the motor manufacturer. In such equipment as refrigerators, oil burners, washing machines, etc., they keep motors working by preventing burnouts. If you would like increased customer-preference, reduced service calls and minimized repairs and replacements, it will pay you well to ask for equipment with KLIXON Protectors.

KLIXON

SPENCER THERMOSTAT
Division of Metals & Controls Corp.
1812 FOREST ST., ATTLEBORO, MASS.

Practical Experience Is My Teacher

(Continued from bottom of page 95)

17 men and two trucks are never idle today.

Over 60 percent of our radiant panel installations go into homes. This is the business we really like. We do a considerable amount of industrial work too, but we prefer the residential installation for it does not take as long to complete. In these days of restricted materials and high taxes, we prefer jobs that do not tie up men, money and materials for long periods of time.

What is the secret of our success? We have always satisfied every customer. No matter what it costs, we give the homeowner what he wants; and in this way, we always make a friend. Especially in radiant panel heating, quality cannot be sacrificed. This is one field in which price cutting will get you nothing . . . nothing but grief.

For the average heating contractor radiant panel heating need be no mystery. We do feel, however, that it demands more in the way of technical knowledge from the beginner than some of the more traditional methods of heating. But this is largely cancelled out by the way in which the industry is willing to help the contractor.

Schools and manuals are readily available, and manufacturers are eager to contribute design data and engineering advice. The beginning radiant panel heating contractor, if he desires, can submit his plans to the engineering departments of his suppliers. They will be checked, and additional data, if required, will be gladly furnished.

We design over 90 percent of our own installations, and we feel that other contractors, as they learn more and more, should do the same. Except in special cases, I think that it is best for the contractor to design his own jobs. After all, this is one of the best ways to learn at first hand about this type of heating, and the greater knowledge and skill gained in this fashion is always reflected in better jobs for the customer and more business for the contractor.

Next month, Otto Vogt will answer fifty important questions about radiant panel heating.—Ed.

How Scott Promotes Big and Little Jobs

(Continued from bottom of page 99)

near as your telephone. And remember, any plumbing installation from $5 to $5,000,000 can be handled by the Scott Company. In San Francisco — Yukon 2-0400. In Oakland — Glencourt 1-1937. And now, Mr. Kaltenborn."

Kaltenborn: Commentary.

Announcer: "Thank you, Mr. Kaltenborn.

"Let's suppose for the moment that you run a store and it has poor ventilation. Can you call Scott Company about it? Sure you can. Scott Company figures the job, orders and installs the new equipment and year-in and year-out follows through on the service. And that's for any size store in the world.

"Or suppose you want a new oil or gas burning furnace. That's another Scott Company service . . . both installation and maintenance . . . year-in and

(Please turn to top of page 178)

"Rochester, OUR GUIDE TO A BETTER GAUGE"

J. E. Kunkel
FUEL OIL AND COAL SINCE 1907
May 11, 1951
Rochester Manufacturing Co
19 Rockwood Street
Rochester 10, N.Y
Gentlemen:
The name "ROCHESTER" has been our guide to a better gauge since we have been in the oil burner business.
The ROCHESTER "DUAL-DIAL" OIL TANK GAUGE has proven to be the most dependable, leak-proof, trouble-free gauge we could find.
F M BEAMER, MANAGER
AUTOMATIC HEATING DIVISION
J. E. KUNKEL
Philadelphia, Pa.

Throughout the country, Rochester "Dual-Dial" gauges have become the standby of hundreds of dealers like Mr. Beamer. They've found from experience that these rugged gauges mean more satisfied customers and extra profits by eliminating needless service calls. You, too, can profit by these outstanding "Dual-Dial" features . . .

- LEAK PROOF
- PRESSURE TIGHT
- EASY TO READ
- EASY TO INSTALL
- UNDERWRITERS' LISTED

Stocked by leading wholesalers for all standard basement oil burner storage tanks with 1½" and 2" flanges. ORDER TODAY! Rochester Manufacturing Co., Inc., 19 Rockwood St., Rochester 10, New York.

ROCHESTER
MANUFACTURING COMPANY, INC.
DIAL THERMOMETERS GAUGES

ROCHESTER DEPENDABLE ACCURACY GAUGES

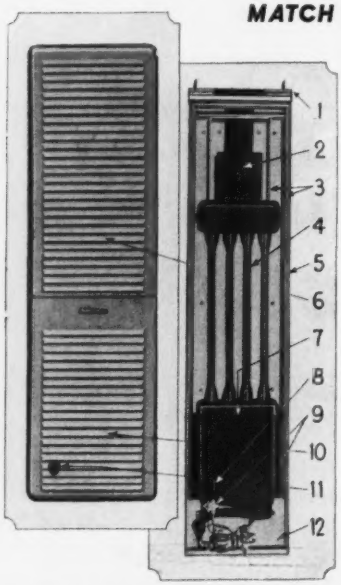
Brilliant Fire

RECESSED WALL HEATERS

FULLY VENTED ═══ FOR ALL GASES

OFFERED in 2 styles. SINGLE-ROOM model for inside or outside walls . . . has Auxiliary Kit available for channeling heat to small adjacent room or be used as cold air return. DUAL-ROOM model is for heating adjacent rooms with one installation yet with separate controls . . . vision-proofed, sound-proofed.

MATCH THESE FEATURES



1. Rigid steel Header to support and insure tight flue.
2. Built-in Draft Diverter eliminates gadgets.
3. Safety multi-liners for more air insulation.
4. 100% welded from burner to flue . . . gas-tight.
5. Wall box telescopes to fit any wall thickness.
6. Low heat delivery for a cozy living zone.
7. Cast-iron head in Combustion Chamber prevents burnouts.
8. Observation port facilitates lighting, adjusting. Has fixed Safety Pilot, also Pressure Regulator for City Gases.
9. Lower Service Panel releases instantly for lighting, etc.
10. Handy Main Burner regulation without effecting auto-controls.
11. Wall Box is "dimpled" . . . metal only touches wood studs here and there . . . added safety.
12.

SINGLE OR DUAL-WALL MODELS

BRILLIANT FIRE Recessed Wall Heaters are ideal heatmakers for home, office, store, etc. They are compact yet complete. Safety-plus construction is a feature . . . multi-liner design and "dimpled" pattern of wall box mean much more air-insulation, greater safety. Installation is simplified . . . the "telescoping" wall box adjusts to plaster, plywood or any other wall surfacing without extra parts or special tools. The BRILLIANT FIRE is easily lighted, adjusted, cleaned . . . handy Service Panel (lower) releases instantly for access to entire operating area. Best of all, the BRILLIANT FIRE has low-level heat delivery . . . keeps the living zone cozy.

A.G.A. APPROVED (latest Central Heating Requirements) . . . ENGINEERED FOR ALL GASES AND FOR HIGH ALTITUDE OPERATION.

DISTRIBUTORS. A few excellent territories still open. Get franchise details.

The OHIO FOUNDRY & MANUFACTURING CO.
Engineers-Manufacturers-Designers
STEUBENVILLE-OHIO-U.S.A.
Quality HEATING EQUIPMENT SINCE 1841

(Continued from bottom of page 177)

year-out . . . and Scott Company specializes in steam or hot water heating plants.

"Suppose now that you need outside utility water lines or steam distribution for a factory. Call Scott Company. Or for some simple plumbing and heating adjustments in the home. Call Scott Company. In San Francisco . . . YUkon 2-0400. Or in Oakland . . . GLencourt 1-1937.

"Scott Company . . . industrial, commercial and home specialists for heating, plumbing and ventilating are the largest mechanical contractors in the West."

Another Script Reads:

"Almost every locality, town or city has the biggest "something or other" of which it is proud. New York and her Empire State Building . . . San Francisco has the Golden Gate—largest single span in the world. But, as you and I know, bigness isn't really all important. For example . . . Scott Company is the largest plumbing contractor in the West, but the important thing to *you* about Scott Company is not how big Scott Company is, but the kind of service it can give you.

"Yes, it's true that Scott Company is the plumbing contractor who is called upon to perform such plumbing, heating and ventilating miracles as you'll find in tremendous construction projects like Macy's department store, the Dodge Motor factory in Oakland or Sears Roebuck building under construction on Geary Street.

"But equally important is the fact that Scott Company's efficient service of heating, refrigeration and plumbing is available to you at home for a telephone call.

"Yes, Scott Company in 50 years of service has earned the reputation of being the largest mechanical contractor in the West *by being able to apply its vast facilities and know-how even to the smallest job.* It's not only how *big* . . . but how *good* that counts.

"And now, Mr. Kaltenborn."

Kaltenborn: Commentary.

Announcer: "Thank you, Mr. Kaltenborn.

"*Maintenance* . . . now there's a word that scares a lot of home owners out of half a year's growth. To them it's a word to avoid unless there's something wrong with the furnace, the plumbing or the refrigerator. But to thousands of other home owners, and the owners of big business as well, the maintenance of their heating plants, their plumbing facilities, refrigeration and all is solved with a simple telephone call to the Scott Company. The Scott Company, the West's largest mechanical contractors, maintains a fleet of *one hundred* service trucks manned by skilled plumbing, heating and refrigeration craftsmen that are on the job 24 hours a day to take care of any emergency you may have.

"Yes, *size* backed up with honest-effort service and real know-how gained from years of experience is the great advantage you have in using Scott Company's service. No job is too large or too small for Scott Company to perform efficiently and economically." The script closes in the usual manner; telephone number, etc.

Don't Buy Until You See the New 1952 "FLEXI-CLEANER"

by AMERICA'S LARGEST MANUFACTURER of PIPE CLEANING TOOLS

Let us do an actual sewer cleaning job for you and prove the superiority of FLEXI-CLEANERS! Our sales representatives are equipped and will be glad to give you a personal "on the job" demonstration without obligation.

1. ONE MAN OPERATION—Complete safety. Operator does not handle the rotating rod.
2. REVERSING SWITCH—Turns either right or left.
3. AUTOMATIC CLUTCH—Pull back to lock—Push forward to open.
4. ½ hp 10,000 R.P.M. MOTOR—20 to 1 gear reduction.
5. Three SPEEDS—right or left—125, 250 and 500 RPM.
6. HEAVIEST COIL ROD MADE. Safe, quick action, patented coupling every 25 feet.

Mail the coupon today!

FLEXIBLE SEWER-ROD EQUIPMENT CO.
9059 Venice Blvd., Los Angeles 34, Calif.
☐ Send illustrated catalog
☐ I wish an "ON THE JOB" demonstration
NAME .....
ADDRESS .....
CITY .....
LOCAL JOBBER .....

FLEXIBLE SEWER-ROD EQUIPMENT CO.
Plumbing Division
9059 VENICE BOULEVARD LOS ANGELES 34, CALIFORNIA
FRANK DONOVAN COMPANY, 9 S. CLINTON STREET CHICAGO 6, ILLINOIS

CS&BCo
CONNECTICUT STAMPING & BENDING COMPANY
THE CONNECTICUT STAMPING & BENDING CO.
NEW BRITAIN, CONN. U.S.A.

LINCOLN Fitall Handle

FOR ECONOMICAL MAINTENANCE AND REPAIR

CROSS ARM REPLACEMENT HANDLE Machined from brass bar stock with heavy chrome plating . . . the four arms are threaded for extra grip . . . comes supplied with handy wrench . . . easy to install. FITALL HANDLES come packed one dozen to a colorful display carton. Order through your jobber or direct from:

WRITE FOR COMPLETE CATALOG

LINCOLN MACHINE PARTS CORP.
732 E. 144th ST., NEW YORK 54, N.Y.

. . . for Sweat Soldering and Tinning!

Does 3 Jobs in 1 Operation

CLEANER

This obviates the use of harsh abrasives, thus maintaining the manufacturers dimensional tolerances. Removes surface oxide or grease.

FLUX

Is water soluble. Residue left after joint is made is washed away. This is most beneficial in a water line, fouling and corrosion buildup is eliminated, a feature not possible with grease base fluxes.

SOLDER

Is finely powdered and is in uniform suspension in the paint; no separation occurs. The melting point and physical properties are exactly the same as ordinary bar solder.

Fluxolder is a uniform mixture of powdered solder and liquid flux; it is of a creamy consistency and is applied cold to the work like paint. Simplicity of application and economy in material are outstanding features. It is a new approach to methods and production in fabrication and sheet metal work. Fluxolder will show a saving of up to 70% in soldering costs; for Tinning it can be thinned down with equal parts of water.

Write for Test Sample and Address of Nearest Jobber

Fluxolder *Paint it . . . Heat it . . . Forget it*

IT CLEANS . . . AS IT TINS . . . AS IT SOLDERS

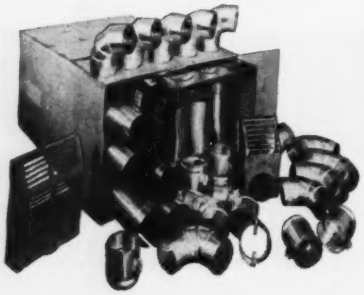
FLUXOLDER PRODUCTS COMPANY
511 WEST LARNED STREET
DETROIT 26, MICHIGAN

GENERAL Automatic

TWO to get ready profits

1. FLOORLEVEL Hot Water Baseboard

A complete hot water heating system, all in one package.



2. Temp RD AIR WARM AIR HEAT

Warm Air installation packaged complete for profits.

GENERAL AUTOMATIC PRODUCTS CORP.
2300 Sinclair Lane Baltimore 13, Md.

SARCO WATER BLENDERS

A 3-way mixing valve which provides any set temperature regardless of the incoming hot or cold water pressures and temperatures. Used for washrooms, process work and engine jacket cooling. Several types available; sizes ½" to 4". Cat. No. 800.

292

SARCO SAVES STEAM

SARCO COMPANY, INC.
Represented in Principal Cities
Empire State Building, New York 1, N. Y.
SARCO CANADA, LTD., TORONTO 5, ONTARIO

IMPROVES PRODUCT QUALITY AND OUTPUT

New Heating Lab

(Continued from bottom of page 104)

miscellaneous equipment necessary to supply liquid to the various panels are located in the lower ASHVE laboratory immediately below the room. Separate pumps and piping systems are provided for the ceiling, floor, simulated cold wall areas and simulated glass areas.

The instrumentation provided will permit readings of:

1 - Surface temperatures within the room by means of almost 400 thermocouples attached to the back of the panels.

2 - Air temperatures at any point in the room.

3 - The rate and temperature at which the infiltration air is supplied.

4 - How much heat is picked up or given off by all surfaces. This is measured by means of 175 heat flow meters, 11½-in. square, which were fabricated at the ASHVE laboratory of bimetallic foil separated by plastic spacers.

Other instrumentation will be added to determine mean radiant temperatures; air velocities within the space; and the flow of heat from the air to any surface or vice versa.

Equipment will be added later which will permit maintaining air temperatures within the room independent of surface temperatures. This will permit the human comfort studies under varying internal dry bulb temperatures, relative humidities and air change rates.

1952 Outlook

(Continued from bottom of page 101)

A factor which will influence the industry's output in the coming year, he added, is "present and expected government regulation of critical metals, principally steel, copper, aluminum, nickel and cobalt."

Such regulation, he pointed out, involves three phases: limitation, simplification and conservation. The first phase, he said, already is in effect, with the likelihood that gas appliance manufacturers will be operating in the third quarter of 1952 with roughly 50 percent of the steel, and lesser quantities of other critical metals than were available before Korea.

The simplification phase, Massey explained, might involve reduction of the number of models and standardization of parts. "So far," he added, "the simplification program has not appreciably affected our products, but some of the manufacturers have taken the step voluntarily without government request."

As for conservation measures, moves are being made in Washington now that will affect various types of appliance manufacture, Massey said. "For example, certain house-heating boilers soon may be shipped without steel jackets. For insulation, a coat of plastic asbestos, applied in the field, will have to suffice. Manufacturers making boilers with standard and de luxe or "extended" steel jackets soon will be permitted to supply either type of jacket, but not both."

Gas Heating Restrictions

There is a possibility of further local restrictions on the supply of gas available for house-heating and industrial purposes, Massey said. "A shortage of steel for necessary pipelines, loops and extensions is involved. It is most encouraging, however, that the Petroleum Administration for Defense feels that industry itself can do a better job than the government of averting gas shortages in essential industrial plants."

The GAMA official indicated that "a partial decontrol, at least, of gas appliance prices is expected at the beginning of the year." He remarked that such a move would relieve the entire industry "which now gropes its way between one official group, headed by Eric Johnston and Charles E. Wilson, which advocates decontrol, and another school of thought, led by Michael V. DiSalle and President Truman, which advocates keeping the controls on."

Both price decontrol and establishment of a positive federal production balance between military and civilian production, Massey said, would take a lot of the guesswork out of the gas appliance industry's planning.

He Gets the Big Jobs

(Continued from bottom of page 101)

for 1000 apartment units, about 40 buildings. Its approach to these management concerns, certainly bonanzas in the repair trade, is straight forward and on a basis of good work.

Wm. Scott Jr. says that his company doesn't solicit business other than by radio institutional advertising and an occasional mailing. "We don't believe that there's enough mark-up in repair work to spend a lot of money in solicitation. Of the $5.00 an hour labor on repair jobs, only about 50-cents is profit. To keep repair costs low, we can't afford a big, wide-spread advertising budget. We limit it to a big fling 13-weeks a year, which is our news broadcast aimed at the commuter."

Scott plugs, institutionally, its better clients by outlining its work with leading San Francisco department stores, factories, etc. Said one recent broadcast, "the Macy's building in San Francisco was built by Dinwiddie Construction Co., with heating by Scott Co."

Scott has built its $5,000,000 annual gross on the little jobs—the leaky faucets and stopped up drains. Unlike some it went from big-job contracting to small job repair, and carries on both simultaneously. By this dual-operation, it keeps its oldline mechanical experts readied for the big jobs, when they come along.

Southern Wholesalers

(Continued from bottom of page 109)

capacity, the cumulative pent-up demand for many products (stemming from World War II and before) that has not been satiated, the many new families—all represent *opportunity* for the future. Our big job, therefore, is a selling one."

In discussing the possibility of material shortages, Mr. Martin pointed out that many of the scarcities of the last war actually resulted in progress, in the final analysis, since they paved the way to new trends and new products.

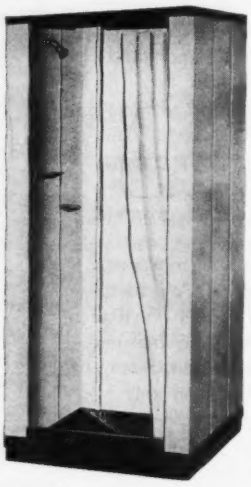
"It seems to me," Mr. Martin said in conclusion, "that if our industry intensifies its effort toward

(Please turn to top of next page)

A Profitable and Thoroughly Established Fact!

VOGT SHOWER CABINETS

Are Quality Merchandise!



Quality Merchandise is the backbone and life-lasting element of any business. In shower cabinets such as *VOGT Shower Cabinets, you will find a prestige-building quality in *VOGT Merchandise. It lends that long-range, deep-seated support to your profits which keep you in business. VOGT shower Panels are heavy gauge zinc-coated bonderized steel or sturdy alloy aluminum. Side panels coated with sparkling white baked-on enamel . . . black top and bottom. Variety of aluminum, vitreous or stone bases. Complete accessories chrome plated. Glass doors available. Easy and profitable to install.

Write *VOGT (pronounced VOTE) for full details today.

VOGT BROTHERS MFG. CO., INCORPORATED
1404 W. MAIN STREET LOUISVILLE 3, KENTUCKY

Challenge Steel Nipples

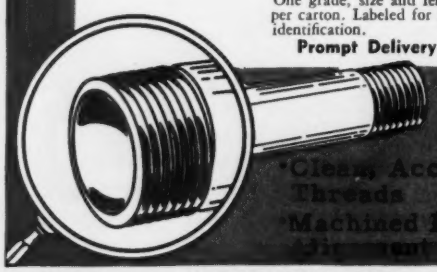
PROFITABLE CONVENIENT

Complete Range of Sizes

There is money to be made by having the proper stock on hand to meet every job. And it is important to have Challenge Nipples in all sizes . . . ⅛" to 12" dia. for lengths from close to 12" inclusive. Standard Extra Heavy and Double Extra Heavy Weights. Carton quantities as approved by U. S. Dept. of Com. National Bureau of Standards, addenda to Com. Standards CS 5-46 dated March 22, 1950.

One grade, size and length per carton. Labeled for easy identification.

Prompt Delivery



FRICK & LINDSAY CO. 117 Sandusky St. Pittsburgh 12, Pa.

Southern Wholesalers

(Continued from bottom of page 181)

creative selling and modern merchandising methods, coupled with proven business practices, we should have no fear of the future."

Charles J. Ramsberg, Jr., sales manager of welded products for the Spang Chalfant Company of Pittsburgh, outlined for his listeners the steel outlook for 1952. He said that after military needs have been taken care of, there will be an amount of steel remaining for civilian and defense-supporting industries equal to that used in the record production year of 1950. At the present rate of production, he estimated that 3 million tons of standard steel pipe will be produced in 1951, as compared to 2,270,000 tons in 1950. Looking ahead, the speaker said that 1952 production would be increased even further, as the result of plant expansions now underway.

Of specific interest to wholesalers, Mr. Ramsberg announced that an amendment to warehouse order M-6 (due January 1) will permit shipment of steel pipe to warehouse stocks amounting to 100 percent of the base period allotment, as compared to the present 85 percent.

The speaker revealed that current investigations by both his own company and by the Pipe Research Committee of the American Iron and Steel Institute, of which he is a member, have shown that the new "liquid stainless steel" may soon be used as a satisfactory alternate to zinc coating of pipe. This product, which is not expected to be in short supply, can be applied by either dipping, spraying or brushing. Mr. Ramsberg said that test nipples which have been in use for over 20 months are in better condition, generally, than the hot-dipped nipples subjected to the same conditions.

W. A. Brecht, president of Hajoca, Corp., Philadelphia, invited the Southern Wholesalers to participate in the 1952 National convention of the American Institute of Wholesale Plumbing and Heating Supply Assns., which is scheduled to be held in Washington, D. C. during the latter half of next year. Mr. Brecht also traced the interesting history of plumbing and heating supply associations from the founding of the first one (Central Supply Assn.) in 1894.

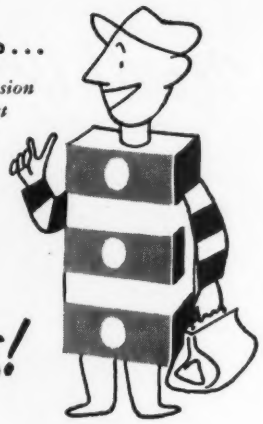
George E. Hoffman, National Production Authority consultant, said that, in his opinion, the full impact of the military buildup on civilian industry has not yet been felt, and that the period of greatest stringency for users of most metal products, primarily copper and brass, is still ahead. He conceded in response to a question, however, that a cease-fire in Korea would probably mean an easing in the copper and brass supply situation of about 25 percent, although it would not be felt immediately. The speaker also stated that it is unlikely that copper tubing for water lines would be restricted further.

Association officers, reelected for the coming year, are Charles G. Cowan, president, of the Cowan Supply Company, Atlanta, Ga.; J. H. Martin, first vice president, manager of Horne-Wilson, Inc., Charlotte, N. C.; O. H. May, second vice president, of the May Supply Company, Mobile, Ala., and E. L. Pugh, secretary-treasurer, Atlanta, Ga.

MIKE ROMET pipes up . . .

Red water . . . scale . . . corrosion —TROUBLE! Here's the best solution yet:

Yes! Lick 'em all— and make big money—



JUST RELY ON MICROMET®!

No. 6-G Micromet Pump Feeder

No. 2 Micromet Feeder

Commercial Micromet Feeder

Write for details.

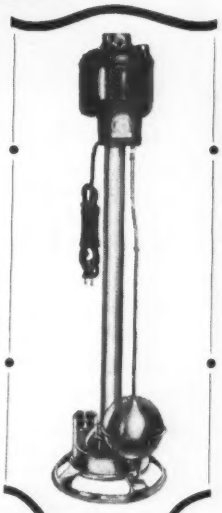
CALGON, INC.,
HAGAN BLDG., PITTSBURGH 30, PA.

Neptune SUMP PUMPS

A Big Selling Point

FOR THE RAINY SEASONS AHEAD

For a truly dependable, automatic and long-lasting sump pump, it pays to specify the NEPTUNE. Protects property in basements, elevator pits, boiler and storage rooms. Regarded tops for its great efficiency. Capable of discharging up to 4,000 gals. per hour.



WRITE FOR LATEST NEPTUNE CATALOG AND PRICE LIST

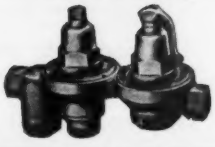
NEPTUNE PUMP MFG. CO.
4912 North 6th Street
PHILADELPHIA 20, PA.

Less Selling Effort Needed WHEN YOU RECOMMEND **KAINER** HEATING SPECIALTIES

The Standard of **QUALITY** *for over 30 years*

There's always less selling effort needed when you sell KAINER . . . the name that for over 30 years has signified the best in heating specialties.

New folder on Governors sent upon request.

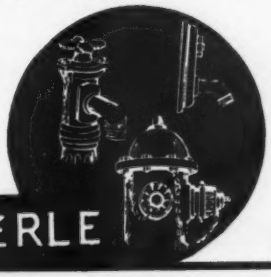


KAINER & CO. 761 LEXINGTON STREET CHICAGO 7, ILLINOIS

A Good Name In These Times

Kupferle has carried on through all the national emergencies of the last hundred years—a good name and a quality line to depend on in these times.

JOHN C. KUPFERLE FOUNDRY CO. ST. LOUIS



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WALL HYDRANTS • YARD HYDRANTS • STREET WASHERS • FIRE HYDRANTS • SPECIFICATION DRAINS • PLUMBING SPECIALTIES • HARDWARE SPECIALTIES

AETNA

THE COMPLETE LINE *Presents a* **NEW CATALOG** *of Plumbing and Heating Products*

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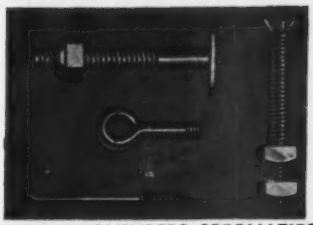
AETNA SALES CO., INC.
1275 McDonald Ave., Brooklyn 30, N. Y.
Plumbing and Heating Products of Quality

PLUMBERS SPECIALTIES

Precision-made parts are essential to dependable work. Hindley has been noted for quality for over 50 years.



COTTER PINS • WIRE HARDWARE • PLUMBERS SPECIALTIES
ORDER FROM YOUR JOBBER.

HINDLEY MFG. CO.
VALLEY FALLS, RHODE ISLAND

PLUMBING AND HEATING WHOLESALERS *Attention !*

Solve Your Pricing Problems THIS **QUICK AND EASY WAY!**

Published in Two Editions the MASTER and SUPPLEMENT Copy

Here are two beautifully bound, loose-leaf price data books for the Plumbing and Heating Wholesaler. Fully illustrated. 24 sections of vital information. The MASTER COPY keeps you up-to-date on market changes, etc. Size 8½" x 11" x 1½". The SUPPLEMENT COPY is designed for wholesalers or jobbers who find it necessary to have a tailored price set-up to meet their own individual needs. Adaptable as a price service book to the customer. Size: 8½ x 11 x 1½ or 2½ inches. Published by the publishers of the Bradford Price Book.

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The **MAC EWAN MARKET MANUAL**

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You'll find out . . .

that

REICHERT COPPER FLOATS

last longer. Patented seam and spud construction makes them sturdy. Guaranteed leak-proof.

Write for folder on complete line.

THE REICHERT FLOAT & MFG. CO.

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SOAP DISPENSERS

– promote cleanliness
– cut soap costs

Write for Catalog 884-W that will give you details on individual dispensers or centralized systems for buildings of all types.

Their economy and efficiency are being utilized to excellent advantage today in industrial plants, schools, hospitals, hotels, airports, service stations, public buildings, etc.

THE IMPERIAL BRASS MFG. CO.
1231 W. Harrison St., Chicago, Illinois

more and more people will

be seated by

A complete line of quality toilet seats

SEND FOR LITERATURE

BEMIS MFG. CO.
Sheboygan Falls, Wis.

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Now Nationally Advertised in BETTER HOMES and GARDENS

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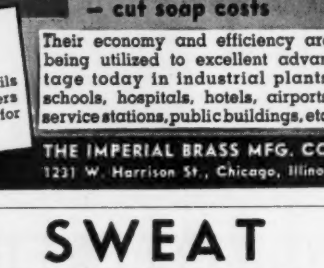
SWEAT FITTINGS



SOLD THROUGH JOBBERS

EAGLE COPPER PRODUCTS CO., INC.
600 JOHNSON AVE BROOKLYN 6, N. Y.

PROFIT FROM LOW-COST, COMPACT "HANDYLECTRIC" AUGER

Cleans up to 3" Waste and Water Lines . . .

Easily . . . Quickly . . . Economically

Easy-to-operate; can be used as electric drill. Has compact AC-DC motor; reverse switch; Jacobs Handtite chuck; front cone grip; one 25-ft. ¼" dia. "Wiropecenter" snake; one 25-ft. ⅜" dia. "Wiropecenter" snake with cutter blades. See your jobber or write.

GENERAL WIRE SPRING COMPANY
906 Sarah Street Pittsburgh 3, Pa.

DO Orders Given Top Preference

St. Joseph Plan

(Continued from bottom of page 95)

The system causes the customer to pay more attention to his credit rating and to make good on promises to the contractor. 6—We increase sales and make profitable customers through okaying what might otherwise seem to be a 'bad risk'. 7—We eliminate ill-will causing friction between the contractor and customer, which, in the past, has eliminated any chance of repeat business between the two. 8—The individual contractor no longer needs to waste time in going after his money himself. 9—In deserving cases we can set up payment plans, whereby a bill may be made good without strain on the customer who has experienced unexpected difficulties. 10—We have reduced bad debt losses for every member of the association. 11—We have eliminated the fear of making mistakes, which often slows up the contractor's transactions. And finally, we help the plumbing and heating contractor become a better businessman and thereby better his customer relations."

The St. Joseph Master Plumbers' Credit Committee analyzes the accounts of each member every month and renders a report of the true condition of each account. All statements and letters are reviewed before being sent to customers, so that there is no possible ground for libel or defamation suits. In addition the group has handled research on property ownership, titles, abstracts, etc., to guard against situations in which the contractor could wind up the loser.

Bad debt losses have become almost a thing of the past in this Missouri association, due primarily to the efforts of the committee. All members pay a percentage on their credit work to cover bookkeeping, stationery and personnel costs. The costs have been repaid a thousand times in more profits, the spokesman said.

Let Machines Do the Job

(Continued from bottom of page 83)

Then determine how fast a machine and one man can do the same job; multiply by the total cost of man and machine per hour (taking into consideration the per-hour cost of the machine when amortized over its life expectancy), and then subtract this total from the one above.

In most cases, the contractor may be surprised to discover that machines will not only pay for themselves in a surprisingly short period of time . . . but will even return an actual profit in the long run.

An article in the forthcoming January issue of DOMESTIC ENGINEERING will illustrate how this formula, and the above indicated results, are put into actual practice by typical contractor-dealers.

According to Law

(Continued from bottom of page 123)

at any time." Grounded upon such facts, the court concluded that the letter relied upon entirely as the basis of a binding contract was unenforceable, being incomplete and lacking mutuality.

Quite obviously the seller would have been liable in damages to the contractor if the contract had clearly stated first, what was meant by the "list price" and secondly, the letter sent by the seller to the contractor had stated that the contractor had the right to specify the grades, and sizes of the pipe he wanted the seller to deliver.
Citation: Staley v. Harvey, 226 S.W. (2d) 897.

THE COURTS CONSISTENTLY HOLD that plumbing contractors may recover payment for "extra work" if the contract does *not* specify the contract price. Hence a contractor is not prevented from demanding payment for "extra work" if the contract does not stipulate the amount of materials and labor to be furnished at a definite price.

For example, in a recent case it was shown that a sub-contract did not clearly specify the amount of work to be done by the sub-contractor (a plumbing contractor).

In subsequent litigation the higher court held that the contractor could recover payment for work done on the basis of the contract price plus the value of all additional work. In other words, the higher court held the contractor was entitled to receive payment for "extra" work at the regular contract rate. The court said:

"No quantity limitation is mentioned in the contract between the parties or in the contract plans and specifications".
Citation:Dyker Company v. United States, 182 Fed. (2d) 85.

Engineering and Installation Aids

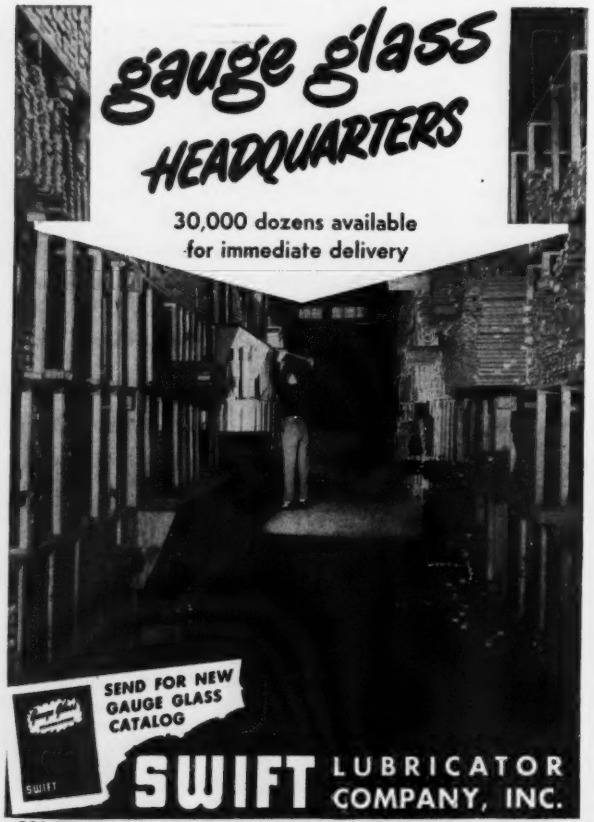
(Continued from bottom of page 136)

signing floor and ceiling panel heating systems for small residences utilizing forced circulation hot water, and includes tabular material, typical floor plans, installation practices, etc.

Other guides released by the I-B-R are: No. 100, *"One-Pipe Forced Circulation Hot Water Heating Systems,"* price 50 cents; No. 2, *"One-Pipe Steam Heating Systems,"* price 25 cents; No. 3, *"Selection and Installation of Indirect Water Heaters,"* price 25 cents; No. 5, *"Baseboard Heating for Small Structures,"* price 50 cents.

Orders for copies of these guides should be sent to

(Please turn to top of page 186)


gauge glass HEADQUARTERS
30,000 dozens available for immediate delivery
SEND FOR NEW GAUGE GLASS CATALOG
SWIFT LUBRICATOR COMPANY, INC.
330 TENTH ST., SAN FRANCISCO 3
36 OLIVER ST., BOSTON 10
ELMIRA, N. Y.

(Continued from bottom of page 185)

The Institute of Boiler and Radiator Manufacturers, 60 E. 42nd Street, New York 17.

For the contractor who sells warm air heating, the National Warm Air Heating and Air Conditioning Assn. has issued a set of manuals covering the design and installation for every conceivable application.

The manuals published to date include: Manual 1—*How to Make a Comfort Survey, How to Make Floor Plans* (4th Edition, 1950); Manual 2—*How to Check Frame House Construction* (4th Edition, 1950); Manual 3—*How to Figure Heat Losses* (3rd Edition, 1950.)

Manual 4—*Warm Air Perimeter Heating* (1st Edition, 1950); Manual 5—*Code and Manual for Gravity Systems* (4th Edition, 1950); Manual 6—*Service Manual for Continuous Air Circulation* (1st Edition, 1947.)

Manual 7—*Code and Manual for Winter Air-Conditioning Systems* (3rd Edition, 950); Manual 7a—*Code and Manual for Ceiling Panel Systems* (3rd Edition, 1950); Manual 8a—*Yardstick for Classifying Warm Air Winter Air Conditioning Systems* (4th Edition, 1948); Manual 9—*Code and Manual for the Design and Installation of Warm Air Winter Air Conditioning Systems for installation beyond 120,000 Btu* (4th Edition, 1950).

These manuals may be obtained singly at 60 cents each, or as a library for $8, from the National Warm Air Heating and Air Conditioning Assn., 145 Public Square, Cleveland 14.

How a Salesman Is Made!

(Continued from page 104) others. The average domestic engineering dealer, on the other hand, operating a smaller business, will find his needs satisfied with one or two methods. Newspaper advertising and promotion from within the company are readily adaptable to smaller organizations.

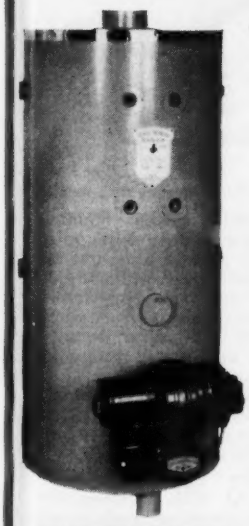
In promoting a man from within the company to a sales position, it is obvious that he would have to be hired in the first place with that eventuality in mind. This does not mean that everyone hired will turn out to be a salesman; nevertheless, the problem of selection must be faced, to a certain extent, whenever a new bookkeeper or someone for the shop is hired. In other words, the problem of recruiting and selection are so closely integrated as to be virtually inseparable.

It's a pretty expensive proposition to train a man to the point where he can go out and do a good selling job; it isn't done by tapping someone on the shoulder and telling him he's a salesman.

How can anyone tell, then, whether or not a man will make a good salesman? Well, there is no single, sure-fire method. There are many schools and colleges, books by the score, personnel testing institutes, sales training aids by the ton and many other sources—all devoted to the subject of selecting salesman. All of them are helpful; no single method the complete answer. In the final analysis, it's largely a matter of good judgement and the ability to "size-up" people—backed up, of course,

(Please turn to top of page 189)

It's More Profitable to SELL
MERCHANDISE that Really Moves!



DEWEY-SHEPARD Vertical FIRE TUBE UNITS

Capacities
95,000 to 1,000,000 BTU
ASME CODE CONSTRUCTED
GAS AND OIL FIRED

Yes, there's real money to be made in DEWEY-SHEPARD (oil and gas fired) Boilers and Water Heaters. Built on the patented "tube within a tube" principle. All units are jacketed with fibre glass insulation, ready for instant hook-up. DEWEY-SHEPARD Boilers consume less fuel, require less repairs, collect no lime or scale. 80% of the fire box heat is absorbed by water. 20% less heat escapes up stack. The unit is compact, of quality construction, dependable, and attractive. In short, DEWEY-SHEPARD has "Sales Appeal!"

WRITE FOR FURTHER DETAILS TODAY!

Boilers Automatically Welded
Oil Burners Underwriter Approved
Gas Burner AGA Listed
Built-in Coils Optional

DEWEY-SHEPARD BOILER COMPANY, INC.
1311 N. CAPITOL AVE. INDIANAPOLIS 2, IND.

Makes Any Fire Door
A "SAFETY VALVE"!
INLAND Safety Door Closer For Gas and Oil Conversion Burners

Used by Thousands of Utility Companies and Contractors for Over 14 Years

Replace the regular boiler or furnace door hinge pins with the Inland Door Closer, file down the door catch and you have an extra "Safety Valve" on the job. Gentle spring tension allows door to swing open on slow or faulty ignition of burner and then close. Wedge holds door open when necessary. It's easy to install with the NEW SPRING HOLDER.

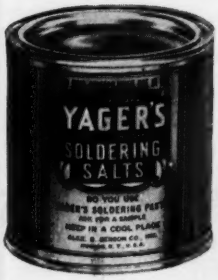
MADE IN 3/16"—1/4"—5/16"—3/8" DOOR PIN SIZES AND PRICED AT $1.00—$1.05—$1.10—$1.15

See your jobber or write us.

INLAND MFG. CO. 1120 N. CICERO, CHICAGO 51, ILLINOIS

YAGER'S
Soldering Salts & Paste!

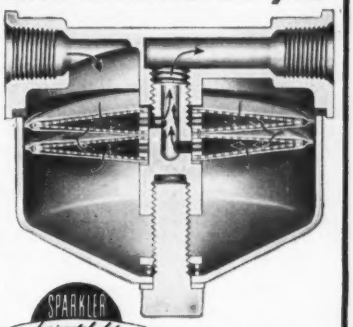
Long Approved by MASTER PLUMBERS



Money making, time saving and dependability are the working elements which have won MASTER PLUMBERS to the loyal use of YAGER'S. Will not streak, discolor, fume or corrode. Available ½, 1, 5 and 50 lb. cans. Full directions on every container.

ALEX R. BENSON CO., INC.
HUDSON, NEW YORK
List of distributors in McKay Blue Book
Sales Agency for Canada
CANADIAN GENERAL ELECTRIC COMPANY TORONTO MONTREAL

CLEAN FUEL OIL
THE SPARKLER WAY
. . . means less burner trouble
. . . fewer call-backs for you



Boost your profits, keep your customers happy, and save needless work for yourself by installing a Sparkler Fuel Oil Filter on every oil burner you service.

The Sparkler Model OB is a *positive* filter because oil cannot bypass the filtering element. When oil reaches the burner nozzle, you know that all sediment (even micro-size particles) and water have been removed. The burner works more efficiently and your customers need not worry about emergency calls.

There's a size for every installation
Write for complete details

And whenever you service a Sparkler-equipped burner, don't take chances by leaving the old discs in the unit. Install a new cartridge. It takes less than a minute, gives you a profit-making sale and protects your customer.

SPARKLER MANUFACTURING CO.
Mundelein, Illinois
Manufacturers of precision filtration equipment for more than a quarter of a century.

WESCO LAUNDRY TRAYS

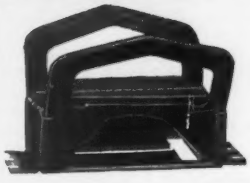
TOPS IN QUALITY

Smartly designed for safety and long-lasting utility. WESCO Cement Laundry Trays are hand rubbed to eliminate porosity. Corners, inside and out are rounded for best washing results. Rims are of non-rusting solid zinc. Available in 2 part tray (as shown) . . . one part, three part and two part DeLuxe Shelf Type with built-in wash board. The Wesco plant has 50,000 sq. ft. of floor space for the manufacture and storage of laundry trays, ensuring shipment of well seasoned trays at all times. Inquiries from jobbers solicited.

ARE FULLY GUARANTED

WESCO MANUFACTURING CO.
P. O. BOX 175 WELLSVILLE, OHIO

IT'S *Tops* IN CONCRETE INSERTS !



The Carty & Moore Concrete Insert is "tops" because of its wide wing spread which gives it a stronger hold in the cement. It's "tops" because its travel slot permits wider adjustment. And it's "tops" because the nut cannot slip out.

Available in sizes for ⅜, ½, ⅝ and ¾ inch nuts

CARTY & MOORE ENGINEERING CO.
1150 W. Baltimore Detroit 2, Mich.

WRITE FOR LITERATURE

INDEX
TO HELPFUL LITERATURE

The following list is published as a help to readers who want the latest authoritative literature on plumbing drainage products necessary for the protection of both the supply and drainage lines. Simply check "Items Wanted", and mail as indicated below.

1. Folder on roof, floor, and shower drains
2. Folder on LEVELEZE adjustable top floor drains
3. Manual RA – specifications and roughing dimensions on all drainage products
4. Manual B–the complete treatise on grease interception
5. Folder on backwater and sewer valves
6. Folder on Moderator Shower Mixing Valves
7. Manual SP-3 – a 32-page book on Swimming Pool Construction
8. Folder on Shock Absorbers for Water Hammer

✔ CHECK "ITEMS WANTED"

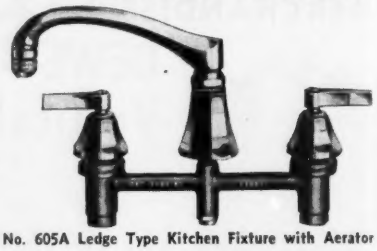
[1] [2] [3] [4] [5] [6] [7] [8]

AND MAIL TO
JOSAM MANUFACTURING COMPANY
304 JOSAM BUILDING • CLEVELAND 13, OHIO

65 YEARS OF QUALITY

BATH & SHOWER FIXTURES
•
LAVATORY FIXTURES
•
KITCHEN FIXTURES
•
LAUNDRY FIXTURES
•
ROUGH BRASS

GO AFTER REMODELING WITH GLAUBER FIXTURES



No. 605A Ledge Type Kitchen Fixture with Aerator

When winter weather curtails building it's time to take on more remodeling jobs. You'll find Glauber fixtures a natural for this market because the conventional designs harmonize with most interiors—the easy installation features save time and labor, and the guaranteed trouble-free performance of Glauber plumbing assures satisfied customers.

Ask your wholesaler for complete information on Glauber quality brass goods . . . their low cost provides for plus profits on every installation.

GLAUBER BRASS INC., Kinsman, Ohio

Glauber
PLUMBING BRASS IS MADE TO LAST

TAC does what no other tool can do!

AT LAST! AN OPEN-END RATCHET WRENCH — the world's first true *universal* wrench. A patented design for connections on tubing, rods, piping, conduit, studs, etc. Sixty-four socket sizes from ⅜" to 4" Smallest effective ratcheting arc yet — 5° to 7½°. TAC will also do every job any ordinary ratchet wrench will do: one TAC set replaces literally dozens of single-purpose hand tools.

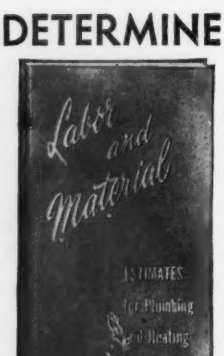
makers of advanced tools for industry

TAC

TAC is the registered trademark of

TUBING APPLIANCE CO.
7112 South Victoria • 10321 Anza Ave. • Los Angeles, Calif.

How to
DETERMINE THE RIGHT BID!



Heavy bound cloth cover —5¼ x 8¼ inch size— 120 pages with index for easy reference. Every plumbing and heating contractor who prepares bids has a vital need for this handy, compact book. Don't lose out on profitable business. Send for your copy now. Price postpaid $2.50 (please send cash with order).

Send your orders to
BOOK DEPARTMENT

Stop losing jobs and money because of bids that are either too high or too low! Avoid costly mistakes and oversights! Newly revised 1950 edition of "Labor and Material" gives you all the facts you need to know to determine, quickly and accurately, the cost of all necessary material and labor.

Over 100 tables and charts show exactly what materials are needed and the size of each . . . gives installation time of each unit. Diagrammatic drawings of lavatory, shower, drinking fountain installations, etc. Discusses in detail the amount of profit and overhead you add to your bids. Special chapter deals with "unit system" estimating. Use it to get overall costs quickly . . . verify detailed estimates. Turn long hours of calculating into minutes of pleasure!

DOMESTIC ENGINEERING PUBLICATIONS
1801 PRAIRIE AVENUE
CHICAGO 16, ILLINOIS

(Continued from bottom of page 186)

by all the help from the sources mentioned.

In general, most authorities recognize six major points which are to be considered when hiring a person for a sales job; they might well be applied to almost any job. The six points are: (1) good background, (2) strong character, (3) good personality, (4) pleasing appearance, (5) mental alertness and, (6) a strong desire to sell.

These points are very basic and, since they actually fall under the subject of selection, are treated only briefly in this article. In next month's article, the subject of selection will be discussed at considerable length.

To return to the subject of recruiting: In surveying domestic engineering dealers around the country on the subject of recruiting (see page 105 for results), it was noted that "promotion from within the company" was the method most frequently encountered. Many of the contractors didn't think of it as "recruiting." A typical reaction to the question of "How do you recruit your salesmen?" went something like this: "Why, these men have been with me for many years. I trained them myself in the office and in the shop; they're my own men." This form of recruiting and selection has worked very well for domestic engineering dealers and one certainly can't quarrel with success.

There are other methods being used successfully. Some contractors whose business is largely seasonal have had better than average success with recruiting salesmen during their peak period by means of newspaper advertisements in the classified section. University graduates with engineering degrees have worked out successfully in many cases, but not in all cases. There are other examples in which a person with no previous experience in selling or in the plumbing and heating field became a real producer.

To summarize, then, recruiting, while very important, is not too serious a problem for the domestic engineering dealer. Recruiting and selection are so closely allied that they become almost a single element in the making of a salesman. Selecting the right man is the important thing, and next month's article on the subject will present practical, easy-to-apply methods designed to take much of the "guess-work" out of selection.

Oil Burner Insurance

(Continued from bottom of page 129)

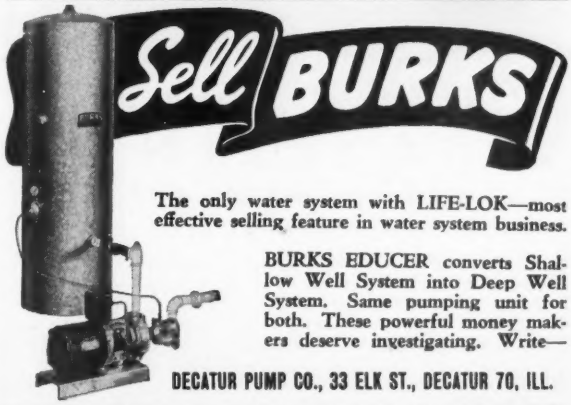
of money. For installations made by the dealer himself, however, this risk is not present.

Facts and figures speak for themselves, and in this case they wax eloquent on the success of the Oil Burner Insurance Plan. As a result of this and related promotions Mr. Davis keeps 15 men and 6 trucks busy 75 percent of their time on the installation and servicing of heating units.

"This emphasis on customer service really pays

(Please turn to top of page 190)

SUPERIOR
ALUMINUM SHOWERS
Greater Shower Value For Your Customer's Dollar
1. Beautiful "Years Ahead" design in variety of models.
2. Simpler 30 minute installation.
3. Bolted construction for greater stability and longer life.
4. Life-time, non-rusting aluminum in white baked enamel or natural finish, also galvanized, bonderized steel.
5. Exclusive, double splash boards for extra strength and beauty.
Deluxe (Aluminum) Available with or without door. 16 gauge aluminum. Natural or white baked enamel finish. 30"x30", 32"x32", 36"x36".
Choice of cast stone porcelain enamel, baked enamel steel, or non-slip aluminum receptor.
IMMEDIATE DELIVERY
Illustrated Catalog & Price List on Request
SUPERIOR America's Fastest Growing Line of Steel & Aluminum Showers
SUPERIOR SHOWER COMPANY
47-05 Fifth St. • Long Island City 1, N. Y.


Sell BURKS
The only water system with LIFE-LOK—most effective selling feature in water system business.
BURKS EDUCER converts Shallow Well System into Deep Well System. Same pumping unit for both. These powerful money makers deserve investigating. Write—
DECATUR PUMP CO., 33 ELK ST., DECATUR 70, ILL.

Advanced Design of

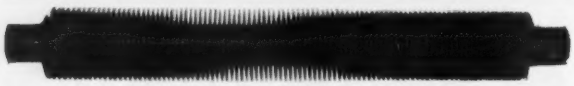
NICHOLSON *Traps*

Helps Restore Heating Systems

That the faster heat transfer of Nicholson radiator traps can help restore sluggish systems is repeatedly demonstrated by institutional installations. Nicholson's advanced features: 1. *Operate on lowest temperature differential.* 2. Larger valve orifice, effecting greater discharge. *Size, ½" and ¾"; vapor and vacuum; press. to 15 lbs. Competitively priced.*

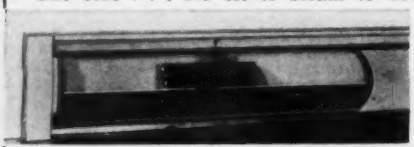
BULLETIN 744
190 Oregon St.
WILKES-BARRE, PA.

W. H. **NICHOLSON** & CO.
TRAPS · VALVES · FLOATS



A Close-Up View of the
BASELINE
Circular Corrugated Fin
UNCOVERS GREAT PROFITS TO YOU!

A popular seller, for distinctive reasons of its own, the BASELINE Circular Corrugated Fin provides a larger air-wiping surface . . . increases radiation . . . and produces equal heat per foot as conventional rectangular fins. Core supplied in 1′ to 20′ continuous lengths. Steel pipe easily cut and threaded on the job. Perforated metal casings supplied as covers for either size core . . . for either steam or hot-water heat.



You Can Make a Single or Double Core Installation

Above illustrates the BASELINE Conventional Baseboard Radiation equipped with regular ¾" copper and aluminum core. May be installed with double core as shown. Fingertip damper control facilitates adjustment of heat output from closed to ⅓, ⅔ and wide-open heat release. WRITE FOR INFORMATION ON OUR LOW COST BASELINE SYSTEM.

Baseline Mfg Corp
111 NORTH WASHINGTON AVE
MINNEAPOLIS 11, MINN.

Eastern Sales Office:
2137 "K" Street, N.W.
Washington 7, D. C.

A FEW TERRITORIES STILL OPEN FOR MANUFACTURER'S AGENTS—

(Continued from bottom of page 189)

off," says Mr. Davis. "In these hectic days the customer is often frustrated in his business dealings because no one seems to have the time or inclination to please him. Consequently, the dealer who goes out of his way to make the customer happy will get and keep the lion's share of the business."

Mr. Davis promotes his operation through all the usual channels of advertising, of course, but he concentrates on his service plans. These are brought to the customer's attention by direct mail pieces (see page 129). "Also," says Mr. Davis, "our old customers are really our best salesmen. They tell others about our Oil Burner Insurance Plan."

Outside salesmen follow up all leads of this sort, and, says Mr. Davis, many a remodeling job (meaning appliance and plumbing sales) have developed out of what were originally only service customers.

"We sell service," says Mr. Davis, "and service sells for us."

3000 "Yeses" Can't Be Wrong!

(Continued from bottom of page 106)

these pages demonstrate just how the "low-pressure" technique is applied in actual practice. Other contractors will no doubt see how many of these techniques can be applied to their own operation.

"Not once did we high pressure either the homeowner or the contractor. Not once did we try to force their hands," Shoup stated. "We simply made suggestions, at strategic points in the progress of the contract. We merely told the truth—which every housewife recognizes as fact—that the addition of a dishwasher and disposer would make the home more appealing, a better place for the wife to work in. The cumulative force of these gentle suggestions builds up a powerful sales message."

How well these tactics have worked over the past 22 years is evidenced by this contractor's status in Southern California contracting circles. Annually the firm does as many as 300 contracting jobs, many of them major ones. It has 11 job trucks, 10 journeymen, and has managed to dot the Santa Monica bay area, its contracting hunting-grounds, with some of the most attractive on-the-job signs in all contractordom. The signs, in contrasting black and white, were designed some 15 years ago by Foy J. Vander, the firm's founder and president. The sign has remained unchanged through the ensuing years. The sign adorns all company trucks, its station wagon, is made up into decals for all appliances, is carried on the rear of Santa Monica taxicabs, and what's more important, is posted on every job.

"We have a theory about job signs," says Shoup. "The minute we know we have the contract, we rush out to post our sign. Some of them are as big as 6 x 6-ft; some are 3 x 2-ft. The sign goes up on the job long before our men move in for their phase of the work. To us, the job-site is a kind of free billboard space. And we take every advantage of this free advertising."

But getting back to "pressure points" in appliance merchandising . . . while the six main points are in the form of verbal suggestions, there are other visual,

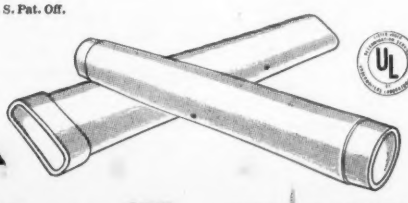
(Please turn to top of page 193)

Over 60,000,000 ft. in service!

Johns-Manville Transite* Flue Pipe has for nearly 20 years enjoyed a reputation for dependable, economical service in thousands of installations. Proof of its many practical advantages is shown by the fact that there are more than 60,000,000 feet of this asbestos-cement pipe in use!

For complete details, write for folder TR-84A. Address Johns-Manville, Box 290, New York 16, N. Y.

*Reg. U. S. Pat. Off.



JOHNS-MANVILLE JM PRODUCTS

Johns-Manville TRANSITE FLUE PIPE

FOR VENTING DOMESTIC GAS-BURNING APPLIANCES

KAM

KAM

COPPER BOILERS

INDIRECT HEATERS OIL HEATERS

INSTANTANEOUS HEATERS COPPER BOILERS

KAM WATER HEATER MFG. CO., INC.

239-249 Alabama Ave. Brooklyn 7, N. Y.

The Oldest Name in Heating

1850 101 Thatcher Years 1951

WARM AIR HEATING FOR OIL • GAS • COAL

Thatcher FURNACE COMPANY Specialists in heating Since 1850

GARWOOD, N. J.

KEK and REP

STOP

BOILER TROUBLE

KEK For Dirty Boilers
CLEANS AND PREVENTS SCALE, OIL AND CORROSION

REP The New Boiler Repair
PERMANENTLY REPAIRS LEAKS IN CAST IRON BOILERS—ODORLESS

Also Kenite Pipe Joint Sealants

KENITE LABORATORY

Madison Box 268 New Jersey

BARBER BURNERS

For All Gas Appliances

Z-21

U-24

We have the facilities and experience for designing and building the exact type and size of burner unit to fit any gas appliance, using natural, manufactured, Butane or bottled gas. We cooperate with any reliable manufacturer in the necessary development and laboratory testing, and in acting as continuous source of supply for his burner units.

Latest Catalog on Request

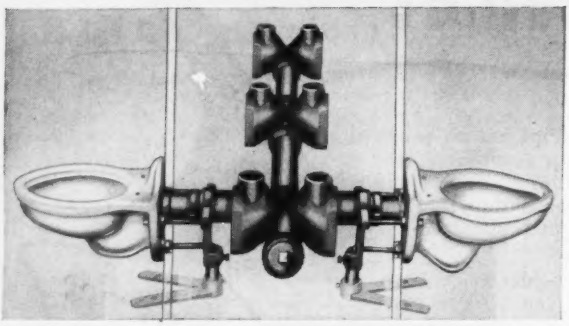
THE BARBER GAS BURNER CO.

3706 Superior Ave. Cleveland, Ohio

BLAKE

ROOF DRAINS • FLOOR DRAINS • SHOWER DRAINS
GARAGE DRAINS • WALL HUNG CLOSET EQUIPMENT
GREASE INTERCEPTORS • INDUSTRIAL DRAINS
SWIMMING POOL DRAINS • DRAINAGE STAPLES

TWO POPULAR PRODUCTS FROM BLAKE'S COMPLETE LINE



L-1565-SD and L-1565 SPD DOUBLE TY FITTINGS

These Blake fittings are particularly adaptable for installations having batteries of closets in a row. Made for both screw pipe and soil pipe—and for either Blowout or Syphon Jet Bowls. Again illustrating that, regardless of what your problem is on wall hung installations, Blake can take care of you.

Style L-155
Double curved style—two sets of handles afford individual operation of each plug.

PATENTED LIGHTNING TEST PLUG

Designed for instant insertion or removal

Handles locked in closed position as shown expand rubber rings, effectively sealing inside of tee, etc. for test. A few turns of handle and block assembly in open position lessens or increases expansion as desired. Guaranteed against defects. For cold water pressure only.

For further particulars, ask for Blake Catalog No. 16

Blake Division of
HOFFMAN SPECIALTY COMPANY
1001 York Street • Indianapolis, Indiana

"EPCO" NOTE INSULATORS
Dielectric Unions
(INSULATED)

Recommended to Protect Water Heaters and Copper to Galvanized Plumbing Installations. Prevents Electrolitic Decomposition of Storage Tanks.

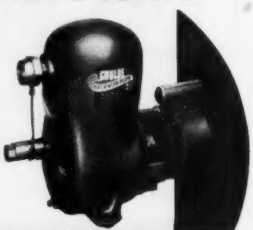
WRITE FOR DETAILS OR SEE YOUR JOBBER TODAY

ECOFF PRODUCTS COMPANY
3265 W. 17th ST. CLEVELAND 9, OHIO

A TIP *to Goulds Dealers*

Here's a Christmas present that means years of comfort and convenience to a whole family!

Feature the Balanced-Flow—and the other dependable Goulds pumps — *now!* For *you,* it means—*extra* Christmas profits this year.



Goulds Pumps Inc.
Seneca Falls, N.Y.

GOULDS Balanced-Flow JET for Shallow Wells

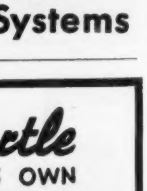
GOULDS Water Systems

Protect your Customers with...
SHERWOOD Ball Cocks!

You protect your customers many ways with the SHERWOOD No. 86-A Ball Cock. It is top flight merchandise . . . does what is required of it . . . is quiet, long-lasting and dependable. The SHERWOOD No. 86-A is an anti-syphon, ball cock. Safeguards families against the contamination of drinking water. Moreover it does not waste water or corrode. ORDER FROM YOUR JOBBER NOW!
SHERWOOD BRASS WORKS 6331 E. Jefferson, Detroit 7

SHERWOOD Ball Cocks

The Turtle
CARRIES ITS OWN PROTECTION
but
YOUR PIPE, VALVE AND TANK THREADS NEED KRASCO PROTECTION
FOR MALE & FEMALE THREADS



KRAUSE STAMPING & MFG. CO.
P. O. BOX 468 WHEELING W. VA.
Write for Free Samples and Prices

USE KRASCO THREAD PROTECTORS

(Continued from bottom of page 190)

lesser points of pressure which Vander the Plumber seldom neglects. (1) No plan leaves the shop without a bid sheet upon which a dishwasher and disposer unit are specified as "If's." (2) Vander supplies two inspections for each prospective dishwasher-disposer premise. One is a Vander inspector, for the plumbing installation. The other is an independent electrical contractor who works with the firm. This is a kind of package deal which goes with each installation. During inspections, Vander's man is not against discussing he advantages of dishwashers and disposers. (3) Another visual pressure point is a penny post-card mailer, sent out to every home-owner or contractor whose intention to build appears in the daily "Green Sheet" of a Los Angeles contractor's paper. Oftentimes a suggestion aimed at dishwasher-disposer sales is typed on this card as a first reminder. Along the way, during the contract's run, there are often other opportunities to press home the dishwasher-disposer discussion.

"Pressure Points," Vander, the Plumber, considers, borrows a little from the first-aid handbook of salesmanship, but a whole lot more from human nature.

Oil Burner Servicing

(Continued from bottom of page 142)

on the sides to be joined only. When tapped or slid lightly into place, the joint should be very thin. *Do not use the mixture to build up uneven surfaces.* It is important that the first course of bricks be levelled carefully so that all upper surfaces will come out even. There will then be no need for such building up. The cement should likewise never be used for filling in any gaps that may appear in construction. In a well built chamber there will be no gaps.

Brick joints are to be staggered throughout the construction of the firebox walls. In large chambers it is not difficult to obtain the full 4½ in. overlap for most of the joints.

The size of the installation and the space available within the boiler base will determine the thickness of the walls. Up to about 12 gph sidewalls are seldom built more than 4½ in. thick (1 brick, on flat, lengthwise). In larger installations a 9 in. sidewall should be used. Every third or fourth course should be a "header," binding the wall through its depth.

Because there is a greater concentration of heat on the back wall in most installations, this wall should be thicker than the sides if space is available. A good heat resistant insulation is used between the firebrick walls and the boiler base. In top grade installations, insulating firebrick are often used. These need not be of highest quality, since they are not exposed to the fire but are simply heat barriers to prevent damage to the boiler setting. There are also pourable refractories for this use. *Sand or rubble should never be used in this space.* Expansion of improper materials can cause the chamber walls to be pushed in.

Expansion joints are provided in large chambers. About ⅛ in. per lineal foot of wall should be allowed, both for the side and back walls. Lack of proper expansion space can cause great strains on the construction under fire. Expansion joints are placed at the rear corners of the chamber.

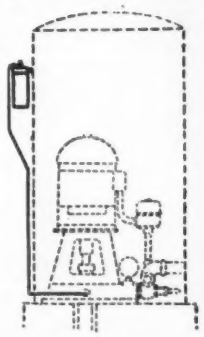
STEVENS & MILLER

AIR INDUCTION UNIT

. . . for all Suction Pumps

Dispels Air Volume Troubles

It's good-bye to air volume troubles in water systems when you install the STEVENS & MILLER Air Induction Unit. You will sharply reduce service calls and gain customer good will with this unit. Works with full efficiency on all types of pumps; jet, turbine or reciprocating; for deep or shallow wells. No valves, diaphragms, springs or floats to wear, corrode or get out of order.



Patents Pending

UNIT CAN BE INSTALLED ON OR AWAY FROM TANK

Simplicity of installation is a prime factor with the STEVENS & MILLER Air Induction Unit. Can be quickly installed on either the pump or the tank, or any place which may be most convenient. Your Jobber has it or can get it for you.

STEVENS & MILLER, INC.
GENERAL OFFICES
127 E. PRAIRIE ST. DECATUR, ILL.

KNOTT
TELL CITY INDIANA

Millions of Knott seats have been sold in the past 39 years

For Neat, Modern Bathroom Refinement

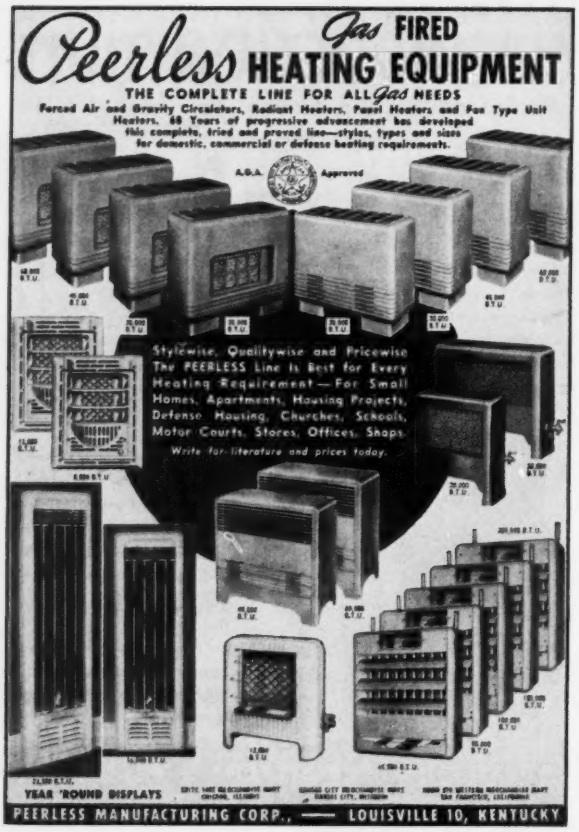
SELECT THE KNOTT TOILET SEAT!

KNOTT Seats are the last word in modern bathroom refinement. They speak of quality . . . smooth, streamlined design . . . beauty . . . color. They are strong, long-lasting and dependable. They do not warp, slit or chip. Because great care is taken in their manufacture, KNOTT Seats are guaranteed by replacement against unforseen flaws. Enduring finishes look like new throughout the years. Choice of either closed or open front. IMMEDIATE SHIPMENT! Booklet upon request.

10 BEAUTIFUL Mother-O-Pearl COLORS

White
Black
Light Blue
Orchid
Light Green
Gray
Peach
Citrus Yellow
Tang Red
Rose

KNOTT
MANUFACTURING CO.
TELL CITY, INDIANA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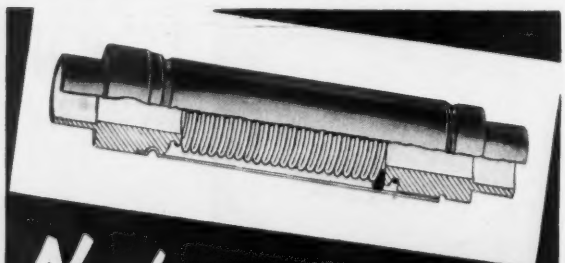

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CLIFFORD HYDRON FIRST WITH THE FACTS ON HYDRAULICALLY FORMED BELLOWS

Floor Furnaces

(Continued from bottom of page 147)

dining room. This is not a good location because of the danger of a small child's crawling onto the hot surface. There is also a hazard due to the propensity to decorate the opening with curtains or drapes.

Installation manuals of some floor furnace manufacturers, apparently giving little consideration to the hazard involved, recommend both the hall location and the between-room location for the flat register floor furnace with the idea that warm air is better distributed in these locations than if the floor furnace is located in the living room itself.

When the furnace is located in the hall, the circulation of air is largely within the hall itself, the walls of the hall acting as a casing with the doors corresponding to outlets from that casing. The fact that the return area of the furnace grille is within the same small hall space as the supply outlet section tends to cause a recirculation of air within the hall space itself so that the furnace will shut off on the high limit control sooner that it would if it were located in a larger space where air is returned at a lower temperature.

While it is probably true that bedroom heating is better with the hall location than it is with the furnace located in the living room, it is also equally true that living room comfort is not as good with the hall location as it is with the floor furnace located in the living room itself. The question which this point raises is: Is it not better to do a reasonably good job of heating the living room at the sacrifice of full comfort in other rooms than to do an inadequate job of heating all rooms? It should be borne in mind that the floor furnace cannot be expected to produce the same quality of performance as a more complete heating system. Its performance is improved by locations which are fairly central, but central location does not necessarily imply hall locations. (Fig. 4, page 147, shows a typical hall arrangement.)

It is doubtful if location in a hall, as shown in figures 4a and 4b, should be used, not only for the reasons given above, but because of the likelihood of raising the temperature of the construction surrounding the hall to hazardous levels. When the doors to the bedrooms and bath are closed and a curtain is hung across the framed opening between living room and hall, air heated by the floor furnace merely recirculates in the small hall itself. It has already been shown that the temperature of air delivered by the floor furnace is of the order of 350 to 400 F. so that the hazard from over-heating wood doors, combustible door frames and the hall partition framing is apparent. A floor furnace should, therefore, never be located in a small space such as a hall that is likely to be closed off. Fig. 4c shows the same plan as Figs. 4a and 4b with the furnace located in the living room. In this position close to the entrance to the hall, air circulation of warm air through the framed opening into the hall and from the hall into bedrooms and bath will be reasonably good. The furnace is removed from the line of barefoot traffic. The remaining hazard is to small children playing on the floor.

The second article of this series will appear in the forthcoming January issue of DOMESTIC ENGINEERING.

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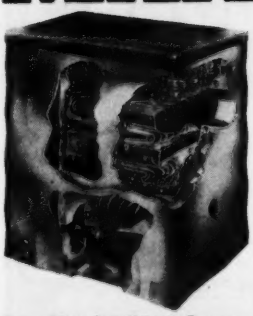

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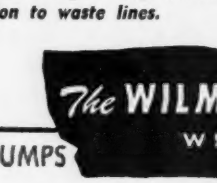

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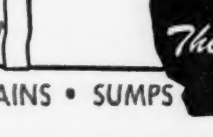

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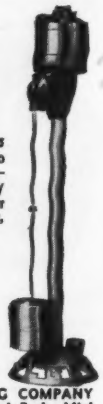

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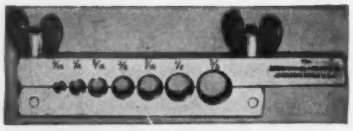

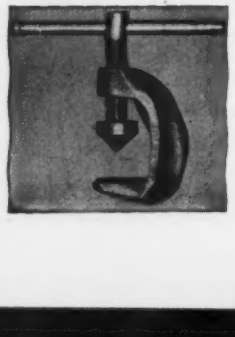

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Questions and Answers

(Continued from bottom of page 118)

certainly indicates that the condition is primarily caused by circumstances peculiar to the housing projects.

If it is due to stray current electrolysis, this type of attack is usually easily identified, for the metal is dissolved at the point at which the current leaves the metal and enters the ground, and the attack is not widely distributed throughout the exterior of the pipe. It would be advisable to check the installation for stray currents. Grounding of any lines carrying electricity to water lines presents a hazard.

However, although many complaints that corrosion of pipe and tube lines is the result of electrolytic corrosion from stray currents, or grounding of electrical apparatus, are indeed reported, it is apparent that authenticated cases of this type of trouble are of extreme rarity. Either the trouble may be charged to aggressive characteristics of the water or it may be the result of galvanic corrosion due to the joining of dissimilar metals.

The dissimilar metals, in the presence of an electrolyte (and water will serve this purpose) induce an electric current to flow from the less noble to the more noble metal. Corrosion of the less noble metal follows, generally, but not necessarily, in the immediate vicinity of the joint. In the cases cited, the galvanized pipes would be affected by this process, if indeed it does exist.

There are, as you suggested, organizations which specialize in the investigation of stray current electrolysis and prescribe methods for control. Your local utilities can perhaps suggest the name of such an organization.

One other thought in this connection: If it should happen that your outside lines are buried in a cinder fill, any moisture produced will create an acid condition which would probably attack any of the commonly used piping materials. Also, with regard to galvanic action of dissimilar metals, relief from this condition can be obtained by the use of insulating fittings which separate the two different metals. This is perhaps always advisable when dangers of this type of corrosive action are established as present or potential in the system. *Arthur I. Heim, Engineer, Copper & Brass Research Association, New York; George D. Lain, Research Engineer, Committee on Steel Pipe Research, American Iron and Steel Institute, New York.*

Self-Siphonage of Fixture Traps

(Continued from bottom of page 126)

hence on the outlet end of the trap when the discharge from the fixture ceases.

The following is typical of the phenomena that were observed when air entered the drain in the first manner described above. The entrained air from the overflow outlet entered the drain in the form of bubbles, which rose to the top of the drain at some indefinite point along it.

If the quantity of air that collected in this way was sufficiently large, the drain, which was flowing full from the trap weir to this point, flowed only partly

(Please turn to top of page 198)

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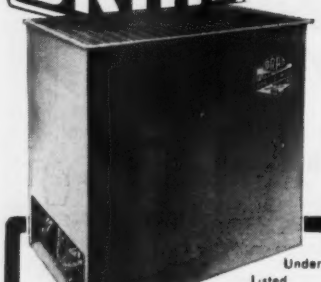

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(Continued from bottom of page 197)

full from this point on to the vent fitting. As the volume of entrained air diminished near the end of the lavatory discharge, the water frequently rose to the top of the drain along one or more portions of its length, filling the entire cross section of the drain (see Fig. 3 page 124). Thus one or more plugs of water formed in the drain near the end of the period of discharge from the lavatory.

As the flow from the lavatory trailed off, the velocity of these plugs of water toward the vent fitting decreased, owing to the adverse head of water in the trap, which tended to slow them down; and at the same time the lengths of the plugs of water diminished, owing to the sloughing off of water at their upstream and downstream ends. If one of these plugs was sufficiently near the trap when this sloughing off occurred, some of the water that sloughed off from the upstream end of the plug flowed backward up the drain and partly or entirely filled the trap. When the plug was farther down the drain, this temporary backflow of water in the drain did not reach the trap, and hence no refill from this cause occurred.

Under test conditions that were as nearly alike as it was possible to make them, the plugs of water that formed as described above varied greatly in size and location, and hence their effect on the remaining trap seal varied greatly. Thus it is apparent that there is no single definite flow condition in the drain corresponding to the discharge of the lavatory, so that considerable variation in trap-seal loss must be expected, even when the conditions are so nearly alike as it is possible to make them.

It was observed also, when the fixture drain was short, that refill entered the trap from the drain because of waves reflected from the vent fitting.

Another way in which partial or complete refill of a trap can occur is encountered when a bathtub trap and drain connect to a wet vent. This phenomenon has been discussed in the first article and will not be described here.

With regard to the refill of the trap by trail discharge, it is well known that with fixtures having relatively flat bottoms, such as a sink, a laundry tray, or a bathtub, the trail dishcarge lasts longer and the film discharge is more pronounced than it is with a round-bottomed fixture, such as a lavatory, and hence there is a greater tendency in the former case for refill of the trap to occur.

The characteristics of the discharge curve for a bathtub—a flat-bottomed fixture—are shown in Fig. 4. The tub had initially a 10-inch depth of water in it. As the water surface lowered, the rate of flow gradually fell off, until suddenly a sharp fall almost down to zero occurred. The beginning of this sharp fall is marked by the formation of a vortex that persists until the tub is empty, except for the minute rate of flow from the film of water remaining on the surface of the tub at the end of the discharge.

Next month's article will present some data on the research techniques employed in this investigation, and a portion of the final results obtained. These are in the form of recommended drain lengths for different types of installations, and should be of considerable interest to domestic engineering dealers.

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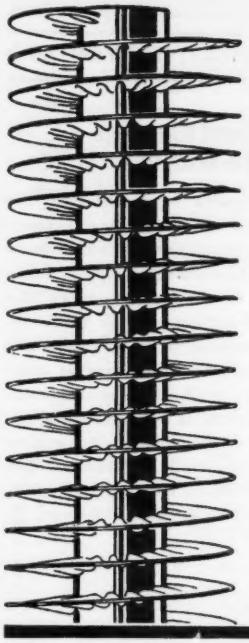

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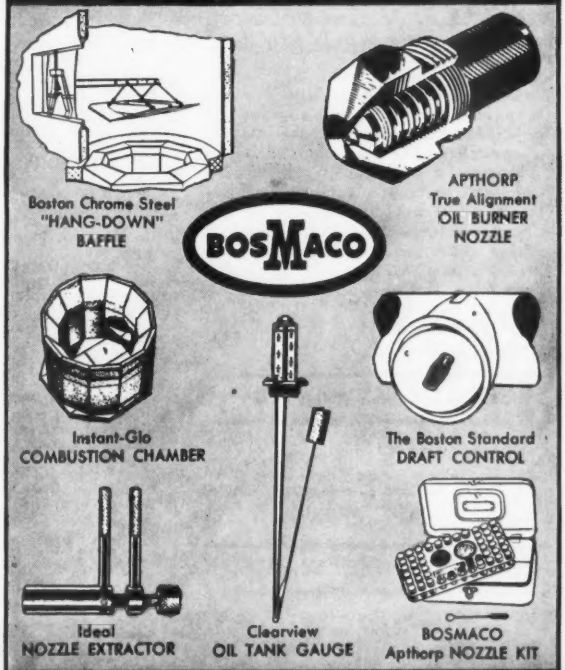

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MANUFACTURER OF PLUMBERS' CAST brass goods desires representatives to sell Plumbing and Heating Contractors on commission basis. All territories open. Address Key 451-D, "DOMESTIC ENGINEERING," 1801 Prairie Ave., Chicago 16, Illinois.

LONG ESTABLISHED JOBBERS SHIPping point, New York. Have several openings for men with own following among plumbing and heating contractors, hardware stores, etc. Complete competitive accessories line. Full details, references first letter. Liberal salary plus commission and bonus. Address Key 465-D, "DOMESTIC ENGINEERING," 1801 Prairie Ave., Chicago 16, Illinois.

REPRESENTATIVES

to call on plumbers, contractors, and hardware stores for wholesale plumbing jobber. No objection to non-conflcting lines in own territory. Want men who will call on all potential customers in small towns as well as large. State qualifications. All replies held in strictest confidence. Address Key 459-D, "DOMESTIC ENGINEERING," 1801 Prairie Ave., Chicago 16, Illinois.

For Additional Classified Advertisements See Pages 202 & 204

TROUBLEFREE, PERMANENT INSTALLATIONS WITH

SOMERVILLE *Cast Iron Soil Pipe and Fittings*

Soil and waste disposal lines, once installed with Somerville Cast Iron Soil Pipe and Fittings, will give years and years of service. No seepage or root entry. No replacement or expensive repairs for generations. Always on guard of community health.

Somerville's modern equipment, up-to-date methods of manufacture, skilled workmen and top quality materials assure you of highest grade products. Somerville's uniform, durable construction and permanent lead caulking assure you of trouble-free and permanent disposal lines. To be sure of this quality depend on Somerville Cast Iron Pipe and Fittings.

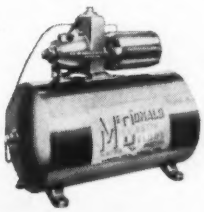
SOMERVILLE
Iron Works
NEW CASTLE, PA.
600 S. MILL ST.

FROM EAST TO WEST
NORTH TO SOUTH

EST. 1856 McDonald

FROM south of the Rio Grande to north of the Great Lakes, from coast to coast, McDonald is insisted upon when dependability, excellence and economy are of prime importance. In the complete McDonald line of Water Systems, you'll find your needs fulfilled exactly and reasonably. We have devoted our 95 years of manufacturing to building more efficient water systems, with precision and durability as integral parts of each product.
A. Y. McDonald Mfg. Co., Dubuque, Iowa.

As us for our free catalog P-50P showing the complete McDonald Line.



Tank Mounted Hydro-Jet

PUMPS • BRASS GOODS • OIL EQUIPMENT

EST. 1856 McDonald

Classified ADVERTISING

REPRESENTATIVES WANTED

REPRESENTATIVE TO COVER STATE of Illinois, Wisconsin and Minnesota, with following to Wholesale Plumbing and Jobbers, to present first-rate line of Chrome Flexible Supplies and other Specialties. Give full particulars in first letter. Address Key 446-D, "DOMESTIC ENGINEERING," 1801 Prairie Ave., Chicago 16, Illinois.

LINES WANTED

MANUFACTURERS' REPRESENTATIVE calling on plumbing and mill supply jobbers in the state of Ohio desires additional lines: C. F. MELCHER, 21351 Aberdeen Street, Rocky River, Ohio.

PERKINS SALES COMPANY
Since 1931
P.O. Box 545, Dallas 1, Texas
Serving Texas, Oklahoma and Arkansas. Own warehouse and trucking facilities. Lines desired: Enamel or steel ware—nipples—pipe fittings—tubular goods.

MANUFACTURERS' AGENTS LOCATED Miami, covering Florida, looking for quality plumbing specialties to promote through architects and engineers and to sell through jobbers. Address Key 302-D, "DOMESTIC ENGINEERING," 1801 Prairie Ave., Chicago 16, Ill.

ACTION
COVERAGE—PROMOTION
Covering all plumbing and heating jobbers in Pennsylvania, New Jersey, Delaware, Maryland, Washington, Virginia and West Virginia.
COBIN and SAXON
1352 Hellerman Street
Philadelphia 11, Pa.

MANUFACTURERS' REPRESENTATIVE well known to the plumbing industry desires lines to represent in North and South Carolina and Virginia. Address Key 453-D, "DOMESTIC ENGINEERING," 1801 Prairie Ave., Chicago 16, Illinois.

LINES WANTED

Young aggressive representative, well acquainted with plumbing supply jobbers in the Midwest, seeks to represent one or two manufacturers with products of special merit. SEYMOUR W. CUTLER, 4065 Milwaukee Avenue, Chicago 41, Illinois.

MANUFACTURERS' REPRESENTATIVE offers active contract with the plumbing and heating jobbers in the State of Michigan on one or two additional lines. L. W. KINNEAR, 16574 Wyoming Avenue, Detroit 21, Michigan.

M. M. MATHES & SON
Manufacturers' Agents
1836 Euclid Avenue,
Cleveland 15, Ohio
Offering active and aggressive coverage of non-conflicting lines to plumbing and mill supply jobbers over entire state of Ohio. Established 1925.

REPUTABLE MANUFACTURERS' AGENT calling on plumbing supply jobbers desires good additional line. Active coverage eastern Pennsylvania, Delaware, New Jersey, Baltimore, Washington. Address Key 420-D, "DOMESTIC ENGINEERING," 1801 Prairie Ave., Chicago 16, Illinois.

RATES FOR CLASSIFIED ADVERTISEMENTS

Eight cents per word, including heading and address. For keyed address count seven words. Minimum advertisement, $2.00 per insertion. Cash must accompany order. For rates on bold face advertisements in this section write to Classified Advertising Department, DOMESTIC ENGINEERING, 1801 Prairie Ave., Chicago 16, Illinois. *All Classified Advertisements are payable in advance!*

LINES WANTED

MANUFACTURERS ' AGENT COVERING metropolitan New York area, including Westchester, Nassau and Suffolk Counties. Am calling on all leading jobbers and can sell your products. Address Key 383-D, "DOMESTIC ENGINEERING," 1801 Prairie Ave., Chicago 16, Illinois.

PACIFIC COAST
Manufacturers' Representative
Contacting Plumbing, Heating, Hardware and Industrial jobbers since 1924—knows them all—enlarging operations for 1952 and is looking for additional lines; Malleable Iron Pipe Fittings, Plumbers Tubular Brass, Pottery, Wooden Toilet Seats, Soil Pipe, Shower Cabinets or other reputable items. Now representing several large nationally known lines. Can furnish best of references from manufacturers and jobbers. Address Key 445-D, "DOMESTIC ENGINEERING," 1801 Prairie Ave., Chicago 16, Illinois.

AGGRESSIVE MANUFACTURERS' REPresentative with eighteen years' selling experience desires wet or dry automatic heating, radiation and pipe lines for New England States. Address Key 460-D, "DOMESTIC ENGINEERING," 1801 Prairie Ave., Chicago 16, Illinois.

FOR
METROPOLITAN NEW YORK
AND LONG ISLAND

Heating equipment (wet and dry), oil and gas burners, boilers, radiation, valves, circulators, piping and tubing.

VOSLER ASSOCIATES, INC.
157-32 27th Avenue
Flushing, N. Y.

R. P. WILEY
616 West 26th
Kansas City 8, Mo.
Selling jobbers throughout Iowa, Nebraska, Kansas, Oklahoma, western Missouri. Warehouse service available.

LINES WANTED

The Mussun Equipment Company
Manufacturers' Representative
958 Hanna Building
Cleveland 15, Ohio
We can handle 2 or 3 additional quality lines for the plumbing and heating trade in Northern Ohio.

WELL ESTABLISHED MANUFACTURers' representatives, operating a competent sales force and covering plumbing, heating and industrial supply jobbers exclusively, in New York and New Jersey territories, invite correspondence from manufacturers of quality merchandise. We do not carry conflicting lines or function as a super jobber but handle each line on a commission basis. Please answer in detail. Address Key 461-D, "DOMESTIC ENGINEERING," 1801 Prairie Ave., Chicago 16, Illinois.

ATTENTION MANUFACTURERS
of items for the plumbing, heating and sheet metal wholesalers. Would you like Eastern sales representation with your cost based entirely upon results? You can be relieved of all selling details—clerical, travel, mail—by utilizing an established organization with resident agents traveling throughout New England, and Eastern New York, calling on plumbing, heating and sheet metal wholesalers and jobbers. Properly qualified and financially responsible manufacturers are invited to write to Key 421-D, "DOMESTIC ENGINEERING," 1801 Prairie Ave., Chicago 16, Illinois.

"TOPS" IN REPRESENTATION. NO, YOU won't go around in circles. However, should you need immediate results, with first class wholesalers on the Eastern Seaboard, contact Key 395-D, "DOMESTIC ENGINEERING," 1801 Prairie Ave., Chicago 16, Illinois. Available January first or sooner.

THE SCHUTZE SALES CO.
1999 North Snelling Ave.
St. Paul 8, Minnesota
Manufacturers' Agency Selling
Important Mid-Northwest Jobbers

MANUFACTURERS' REPRESENTATIVE established in the State of Florida calling on all plumbing and heating jobbers, desires a few more lines to promote. Located at St. Petersburg, Florida. Address Key 369-D, "DOMESTIC ENGINEERING," 1801 Prairie Avenue, Chicago 16, Illinois.

For Additional Classified Advertisements See Pages 200 & 204

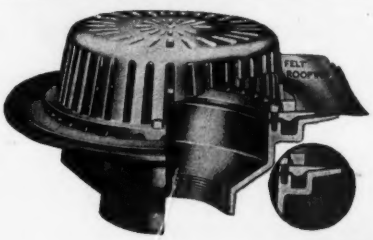
Roof Drainage Problem?

Boosey

No. 1148
ALL PURPOSE DRAIN

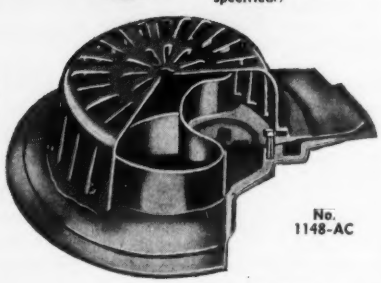
...with Interchangeable Features

All Boosey Roof Drains shown in this advertisement are furnished with the Boosey clamping device which secures the roof flashing material by means of 4 XH hex-head brass bolts. These are tightened down into tappings provided for them in the drain body without coming in contact with the flashing, thus eliminating the piercing of flashing material and furnishing a dependable water-tight connection.

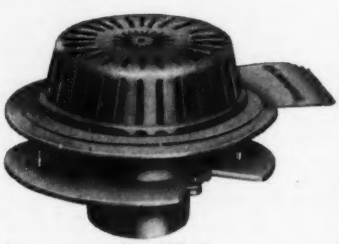


No. 1148 ROOF DRAIN (Illustrated at left) Equipped with inside caulk or threaded outlets. Where expansion joints are required, specify Boosey No. 665 cast iron expansion joint with full iron pipe diameter cast brass sleeve with octagon shoulder for wrench grip. (Furnished with plain or gravel stop clamping flanges as specified.)

The Boosey No. 1148-AC was designed to provide a permanent, predetermined depth of water on roofs, in accordance with the requirements of some types of air-conditioning practices. Removable brass plug is furnished for draining the roof when necessary. (Illustrated at right.)



No. 1148-AC



No. 1148-DC

No. 1148-DC with Adjustable Deck Clamp
Two-piece split cast-iron ring for anchoring drain to a roof deck (with thicknesses ranging from 1¼" minimum to 2¼" maximum) is secured by 4 heavy brass bolts which are tightened into tappings provided for them in the drain body. This Deck Clamp secures the drain solidly to the roof deck, thus preventing damage to the roofing material due to expansion and contraction of the downspout. (Illustrated at left.)
(Specify No. 1148-A if concrete anchorage flange is required.)

For No. 1148 Side Outlet type roof drain specify Boosey No. 1150.

For Chicago Code Type drain with increaser specify Boosey No. 1148-B.

Send For Latest Catalog

NORMAN BOOSEY MFG. CO.
Division American Skein & Foundry Company
420 NORTH LA SALLE ST. CHICAGO 10, ILLINOIS

ANCHOR offers
OIL BURNER

a better burner... a finer franchise

Get the Facts About the NEW FRANCHISE

Complete details about the new franchise on Anchor Oil Burners will be sent on request. Because our previous advertising is already swamping us with requests we urge you to act at once. Use the handy coupon . . . but do it RIGHT NOW!

Positively the best deal in the oil heating industry is Anchor's new conversion burner . . . with the kind of franchise dealers have dreamed about for years . . . and backed by dealer helps that make easier sales. Use the handy coupon to get details . . . today!

ANCHOR
OIL BURNER

ANCHOR DIVISION • STRATTON & TERSTEGGE
Box 311 • New Albany, Indiana

ANCHOR DIVISION
Stratton & Terstegge
Box 311, New Albany, Indiana

Gentlemen: Rush complete details about the Anchor line of oil burners and the new Anchor dealer franchise.

Name_____

Address_____

City_____ State_____

Classified ADVERTISING

LINES WANTED

Serving
New England
Eastern New York State
RAY WESTLUND, JR.
Manufacturers' Representatives
902 Chapel Street
Malley Building
New Haven, Connecticut

WE WILL SELL, STOCK AND SHIP YOUR PRODUCTS

Chicago Distributor selling only to legitimate plumbing and heating jobbers in Illinois, Wisconsin and Northern Indiana, is desirous of adding one or two lines. Have stocking, shipping, and servicing facilities. Financially responsible for own accounts. Address Key 456-D, "DOMESTIC ENGINEERING,", 1801 Prairie Ave., Chicago 16, Illinois.

CHICAGO AND WISCONSIN

Now selling two major lines to reputable and well rated plumbing and heating wholesalers. Seeks one additional line of merit. Address Key 414-D, "DOMESTIC ENGINEERING," 1801 Prairie Ave., Chicago 16, Illinois.

MICHIGAN

Lines Wanted for statewide distribution from our warehouse for small or large manufacturers.

SAMSON COMPANY
2679 EAST GRAND BOULEVARD
DETROIT 11, MICHIGAN

WANT QUALITY LINE. CONTACTING the best jobbers. Representing one principal for over twenty years. Chicago-Milwaukee area. Address Key 425-D, "DOMESTIC ENGINEERING," 1801 Prairie Ave., Chicago 16, Illinois.

LUM AND FLAHERTY
241 POWERS BUILDING
ROCHESTER 14, NEW YORK

Our territory New York State exclusive of Metropolitan district. Have over 300 top accounts among the wholesale supply and large D.T.U. plumbing and electrical trade. Interested in adding one quality line having repeat merit. We give systematic and dependable service.

West Virginia & Virginia
CLARKE SALES COMPANY
Plumbing and Heating Fixtures and Supplies
Representing the Manufacturers
1210 Grant Street, Charleston, W. Va.

LINES WANTED

Ohio Sales Representation RESULTS GUARANTEED

by aggressive sales organization actively selling and known to all jobbers in the territory. Plumbing lines preferred. Address Key 466-D, "DOMESTIC ENGINEERING," 1801 Prairie Ave., Chicago 16, Illinois.

CHICAGO AND SURROUNDING TERRITORY

If you like to sign large commission checks and really want superlative results in sales to the Plumbing and Heating Jobbers, get in touch with me. My name sells any product to the market. Address Key 455-D, "DOMESTIC ENGINEERING," 1801 Prairie Ave., Chicago 16, Illinois.

MANUFACTURERS ATTENTION

Boston manufacturers' representative with long experience selling to New England plumbing and heating supply jobbers, can give personal aggressive representation to additional reputable line. Address Key 443-D "DOMESTIC ENGINEERING," 1801 Prairie Ave., Chicago 16, Illinois.

PAUL ATCHISON SALES COMPANY, 777 Stanford Avenue, Los Angeles 21, California and 607 Market Street, San Francisco 5, California. Lines for plumbing, hardware and industrial jobbers, only. Perfect coverage in California and Arizona for past 20 years. Defense Work: Have created separate department calling on defense plants on Pacific Coast. Need factories with open capacity to do prime or subcontracts.

WANTED

line of steel heating boilers and competitive line of oil burners in:
Pennsylvania East from Uniontown—Bradford
New Jersey South from Trenton
Delaware
Maryland
District of Columbia
Address Key 464-D, "DOMESTIC ENGINEERING," 1801 Prairie Ave., Chicago 16, Illinois

BUSINESS OPPORTUNITIES

PLUMBING—HEATING FARM SUPPLY

Sales $200,000 year; franchise top lines; also appliances; no competition; city 6500; Western New York; building 55 x 107, modern equipped; large stock; price $35,000.

APPLE COMPANY BROKERS
Cleveland, Ohio

MISCELLANEOUS

ESTIMATING SERVICE

Any Trade and Type of Project
Literature and Sample on Request
Construction Survey Cooperative
101 Park Ave. New York 17, N. Y.
MUrray Hill 5-7317 Founded 1922

MISCELLANEOUS

PLUMBERS

I WILL TELL YOU

and

I WILL SHOW YOU

HOW TO

WIPE PERFECT JOINTS

on lead pipe and connections.
A post card for complete
valuable information

GEO. E. WILLIAMS
3035 Aldrich Ave. So.
Minneapolis 8, Minn.

"JOHNSON'S NEW HANDY MANUAL" (in two volumes), by John W. Johnson. Heating Volume—Presented in an easy to understand manner, this book covers heating, ventilating and mechanical refrigeration, pumps, expansion bends, boilers, radiators, tanks, connections, etc. 457 pages, 4 x 6¼, with flexible cloth cover. Price postpaid, Heating Volume, $1. Plumbing Volume—Answers almost any question regarding plumbing, draining and sewage, including factory plumbing, domestic water supply, pumps, connections, expansion and contraction, drainage systems, joint wiping, venting, etc. 404 pages, 4 x 6¼, flexible cloth cover. Plumbing Volume, price postpaid. $1.50. Order from Book Department, "DOMESTIC ENGINEERING," 1801 Prairie Avenue, Chicago 16, Illinois.

"JONES ESTIMATING TABLES" BY Ernest F. Jones. An accurate reference book on air requirements and duct sizes for heating and air conditioning. Makes the work of figuring heating and air conditioning requirements easy and absolutely certain. Eliminates chance of error, saves time in estimating. Four sets of tables cover various types of construction, roofs, floors, ceiling, insulation, single and double glass windows, everything that will have an effect on heating and air conditioning. May be used on any system using ducts. Beautifully bound. Size 5½ x 8¼. 68 pages. Price postpaid, $1. Order today from Book Department, "DOMESTIC ENGINEERING," 1801 Prairie Avenue, Chicago 16, Illinois.

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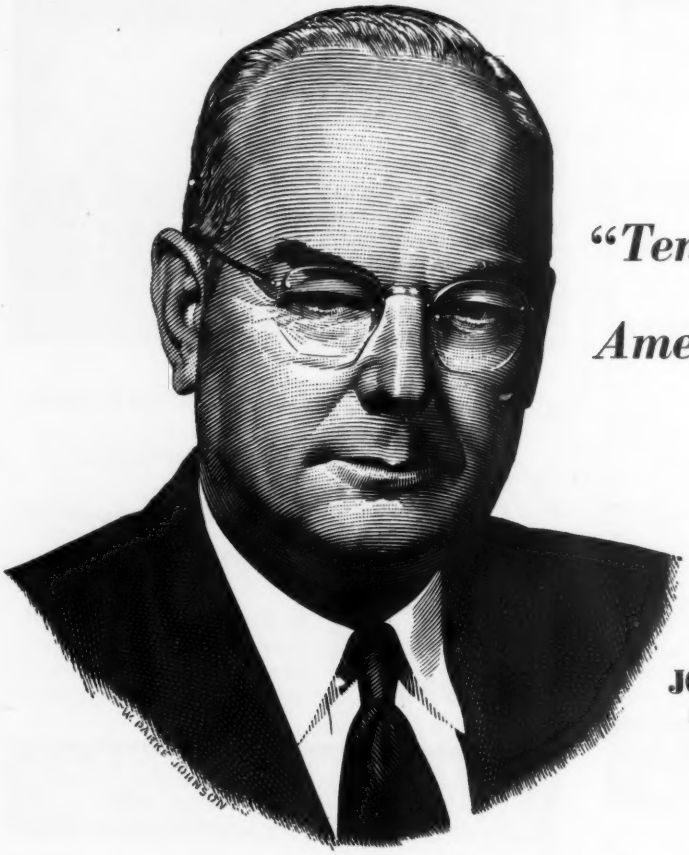

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JOHN W. SNYDER
Secretary of the Treasury

"Ten years ago America's business publications, as a voluntary public service, presented for the first time advertisements outlining the Payroll Savings Plan for the regular purchase of U. S. Savings Bonds, and urged its acceptance. During the decade which has passed, American business has consistently supported the Payroll Savings Plan and made it a success. Continuation of this cooperation with the Treasury is most essential in the present emergency. Expanded sales of Defense Bonds will assist importantly in checking inflation, in preserving economic stability, and in furthering the over-all defense effort."

In ten brief years:

- From 700,000 in 1941 employee participation went to 27,000,000 at the peak of the war.
- Companies with Payroll Savings Plans jumped from 10,000 in 1941 to more than 175,000 during the war.
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- On September 30, 1951, individuals held Series E Bonds totaling $34.6 Billion—more than $4.6 Billion greater than on V-J Day.
- In the January-September, 1951, period, 33,418,000 $25 E Bonds were purchased—a gain of 17% over the same period of 1950. 8,966,000 $50 E Bonds were sold in the first nine months of 1951. *$25 and $50 denominations are the bonds bought by Payroll Savers.*

Congratulations to the executives of industry and the publishers of business papers for their continuing effort in promoting systematic savings through the Payroll Savings Plan—the plan that protects America and Americans.

The U. S. Government does not pay for this advertising. The Treasury Department thanks, for their patriotic donation, the Advertising Council and

DOMESTIC ENGINEERING

NOW-ASSURE YOUR CUSTOMERS YEAR-'ROUND OUTSIDE WATER

INSTALL...

WOODFORD FREEZELESS WALL HYDRANTS

Outside handle turns valve inside building; wall pipe drains instantly. No more going to the basement to turn water on and off in cold weather...

STYLE 10

SAVES time, trouble, costly repairs.

STYLE 9

STYLE 8

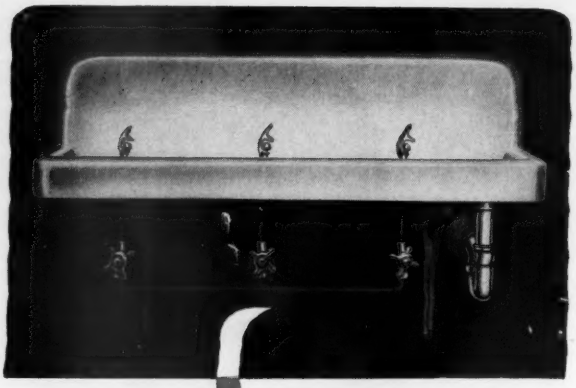
PROTECTS against fire hazards, especially farm and suburban.

STYLE 7

BUILT to last longer, yet it costs little if any more than old-style outlets. Brass castings. Key or wheel handle. 6" to 24" lengths.

Contact your wholesaler—or write . . .

WOODFORD HYDRANT CO.
DES MOINES 17, IOWA
Manufacturers of the Iowa Freezeless Ground Hydrant



Always install HAWS for Highest Quality and Complete Sanitation

Sanitary Drinking Fountains
Electric Water Coolers
Drinking Faucets, Equipment, Filters and Accessories

Easy to sell...simple to install. Long, trouble-free service assures customer satisfaction. Write for HAWS catalog today!

HAWS DRINKING FAUCET CO.
1441 FOURTH STREET (Since 1909) BERKELEY 10, CALIFORNIA
Agents and Sales Representatives in All Principal Cities

It's new... it's low-cost

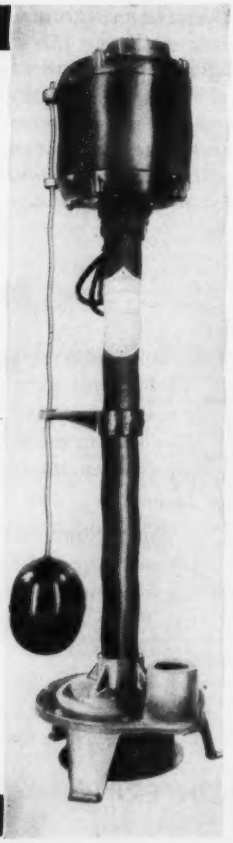
It's the CELLAR DRAINER you need for

- a quick sale
- a profitable sale

WRITE FOR DETAILS AND DISCOUNTS IMMEDIATELY!

EVERITE

Pump & Mfg. Co., Inc.
611 N. Prince St.
Lancaster, Pa.



G & C Season's Greetings

GERSTEIN & COOPER
ORIGINAL ALL COPPER
Tankless Hot Water Heater
EFFICIENT • ECONOMICAL DEPENDABLE

- For Automatic Summer & Winter Hot Water.
- Multiple Small Tubes Silver Brazed Into Large Headers Afford More Efficient Heat Transfer and Minimum Pressure Drop.
- Constant Upward Flow of Heater Water Through Coils in G & C Tankless Heater Allows Circulating Line to Be Used.
- Heavily Insulated Medium Radiation Loss
- Sell the Customers Copper Instead of Iron
- GUARANTEED

The G & C all Copper Tankless Heater is engineered for space saving and efficiency. The Shell design eliminates sediment collection. No gaskets or bolts to cause leaks.

Specify—Buy—G & C all Copper Tankless Heaters

GERSTEIN & COOPER INC.
1-3 WEST 3rd. STREET SOUTH BOSTON, MASS.

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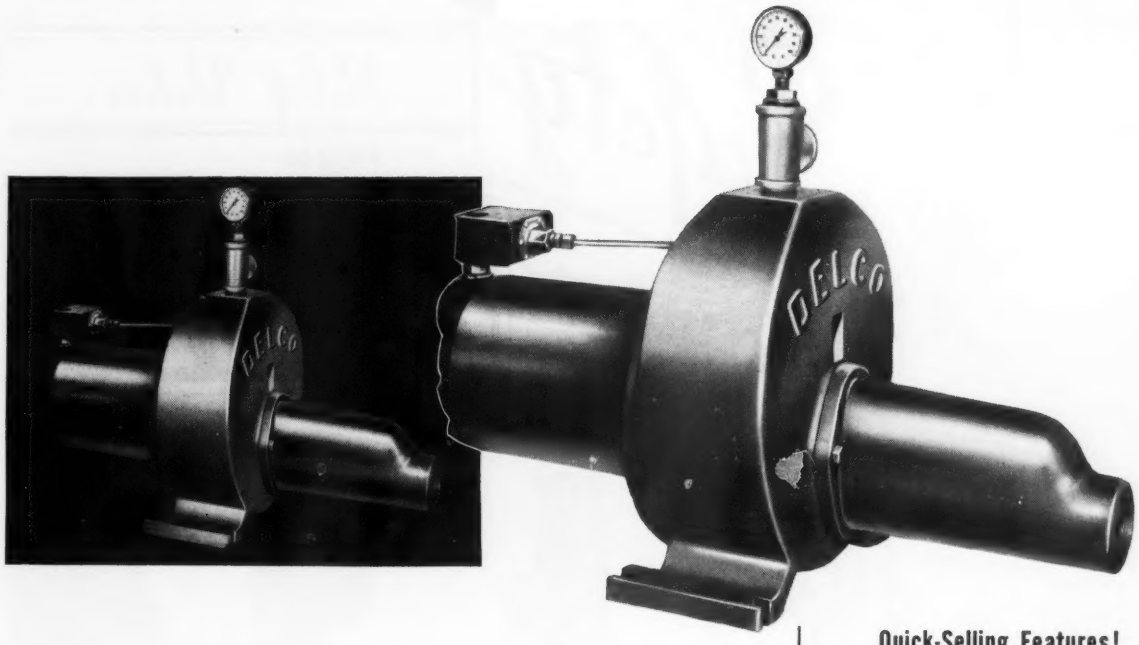

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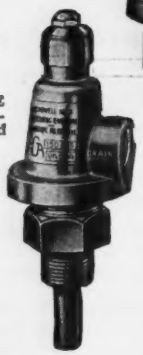

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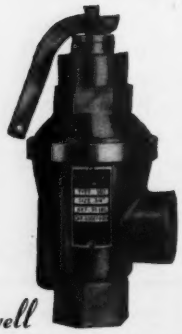

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